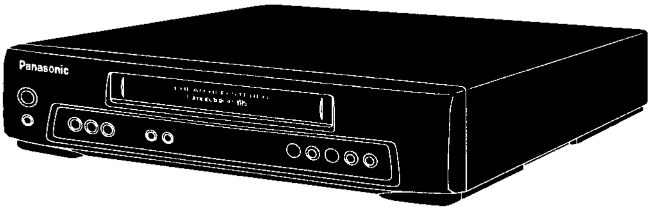
ORDER NO. MKS9612M301
B3

Service Manual

Video Cassette Recorder

Omnivision VHS



P PV-7400
P PV-7401
P PV-7401-K
P PV-7450
P PV-7451
Q VHQ720
Q VHQ740
Q VHQ760

SPECIFICATIONS

ITEM	SPECIFICATION	1	2	3
Power	Source: 120V AC ± 10%, 60 Hz ± 0.5%	○	○	○
	Consumption: Approx. 18 watts (Power on), Approx. 6 watts (Power off)	○	○	—
	Approx. 23 watts (Power on), Approx. 7 watts (Power off)	—	—	○
Video	Head: 2 rotary heads helical scanning system	○	—	—
	4 rotary heads helical scanning system	—	○	○
	Input Level: VIDEO IN Jack (Phono type) 1.0 Vp-p 75Ω unbalanced Output Level: VIDEO OUT Jack (Phono type) 1.0 Vp-p 75Ω unbalanced Signal-to-Noise Ratio: SP: more than 43 dB LP/SLP: more than 41 dB Horizontal Resolution: Color/Monochrome: more than 230 lines	○	○	○
Audio	Head: Normal Mono: 1 stationary head	○	○	○
	Hi-Fi Stereo: 2 rotary heads	—	—	○
	Input Level: AUDIO IN Jack (Phono type) -10 dBv 50kΩ unbalanced	○	○	○
	Output Level: AUDIO OUT Jack (Phono type) -8 dBv 600Ω unbalanced	○	○	—
	AUDIO OUT Jack (Phono type) -8 dBv 1kΩ unbalanced	—	—	○
	Frequency Response: Normal Mono: SP: 100 Hz ~ 8 kHz	○	○	○
	LP: 100 Hz ~ 6 kHz	○	○	○
	SLP: 100 Hz ~ 5 kHz	○	○	○
	Hi-Fi Stereo: SP/LP/SLP: 20 Hz ~ 20 kHz	—	—	○
	Signal-to-Noise Ratio: Normal Mono: SP: more than 42 dB	○	○	○
	LP/SLP: more than 40 dB	○	○	○
	Hi-Fi Stereo: SP/LP/SLP: more than 60 dB	—	—	○
	Wow and Flutter: Normal Mono: SP: Less than 0.2% WRMS	○	○	○
	LP: Less than 0.3% WRMS	○	○	○
	SLP: Less than 0.4% WRMS	○	○	○
	Hi-Fi Stereo: Less than 0.015% WRMS	—	—	○

ITEM	SPECIFICATION	1	2	3
RF Out	CH 3/CH 4 switchable 72 dBμ (open voltage) 75Ω unbalanced	○	○	○
Tuner	Broadcast Channels: VHF 2 ~ 13, UHF 14 ~ 69 CATV Channels: Midband A through I (14 ~ 22) Superband J through W (23 ~ 36) Hyperband AA ~ EEE (37 ~ 64) Lowband A-5 ~ A-1 (95 ~ 99) Special CATV channel 5A (01) Ultraband 65 ~ 94, 100 ~ 125	○	○	○
Video Signal	EIA Standard (525 lines, 60 fields) NTSC Color Signal	○	○	○
Tape Speed	SP: 1-5/16 i.p.s (33.35 mm/sec), LP: 21/32 i.p.s (16.67 mm/sec), SLP: 7/16 i.p.s (11.12 mm/sec) Record/Playback Time: 8 Hrs with 160 min. type tape used in SLP mode FF/REW Time: Less than 3 min. (120 min. type tape)	○	○	○
Tape Format	Tape width 1/2" (12.7 mm) high density tape	○	○	○
Operating Condition	41°F(5°C) ~ 104°F(40°C) (Temperature) 10% ~ 75% (Humidity)	○	○	○
Dimension	14-15/16"(380 mm) (W) X 3-2/3"(93 mm) (H) X 11-13/16"(300 mm) (D)	○	○	○
Weight	7.5 lbs. (3.4 kg)	○	○	○

1. VHQ720
2. PV-7400/PV-7401/PV-7401-K/VHQ740
3. PV-7450/PV-7451/VHQ760

Weight and dimensions shown are approximate.
Specifications are subject to change without notice.

Panasonic®/Quasar®

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⚠ WARNING
This service information is designed for experienced repair technicians only and is not designed for use by the general public. It does not contain warnings or cautions to advise non-technical individuals of potential dangers in attempting to service a product. Products powered by electricity should be serviced or repaired only by experienced professional technicians. Any attempt to service or repair the product or products dealt with in this service information by anyone else could result in serious injury or death.

Use Marks shown in the chart below to distinguish the different models included in this Service Manual.

MODEL	MARK	MODEL	MARK
VHQ720	A	PV-7450	F
PV-7400	B	PV-7451	G
PV-7401	C	VHQ760	H
PV-7401-K	D	NOT USED	Z
VHQ740	E		

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SAFETY PRECAUTIONS

GENERAL GUIDELINES

1. **IMPORTANT SAFETY NOTICE**
   There are special components used in this equipment which are important for safety. These parts are marked by ⚠ in the Schematic Diagrams, Circuit Board Layout, Exploded Views and Replacement Parts List. It is essential that these critical parts should be replaced with manufacturer's specified parts to prevent shock, fire or other hazards. Do not modify the original design without permission of manufacturer.
2. An Isolation Transformer should always be used during the servicing of VCR whose chassis is not isolated from the AC power line. Use a transformer of adequate power rating as this protects the technician from accidents resulting in personal injury from electrical shocks. It will also protect VCR from being damaged by accidental shooting that may occur during servicing.
3. When servicing, observe the original lead dress. If a short circuit is found, replace all parts which have been overheated or damaged by the short circuit.
4. After servicing, see to it that all the protective devices such as insulation barriers, insulation papers shields are properly installed.
5. After servicing, make the following leakage current checks to prevent the customer from being exposed to shock hazards.

LEAKAGE CURRENT COLD CHECK

1. Unplug the AC cord and connect a jumper between the two prongs on the plug.
2. Measure the resistance value, with an ohmmeter, between the jumpered AC plug and each exposed metallic cabinet part on the equipment such as screwheads, connectors, control shafts, etc. When the exposed metallic part has a return path to the chassis, the reading should be between 1MΩ and 5.2M ohm. When the exposed metal does not have a return path to the chassis, the reading must be infinity.

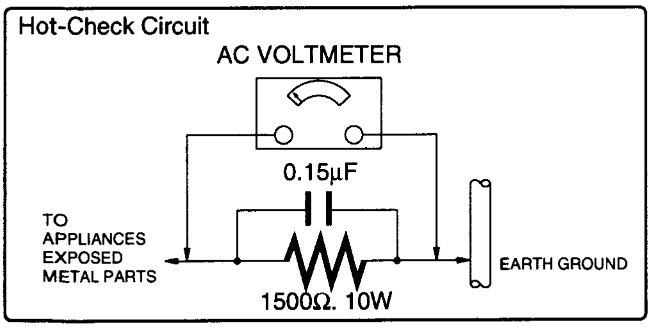


Figure 1

LEAKAGE CURRENT HOT CHECK (See figure 1.)

1. Plug the AC cord directly into the AC outlet. Do not use an isolation transformer for this check.
2. Connect a 1.5K ohm, 10 watts resistor, in parallel with a 0.15 microfarad capacitor, between each exposed metallic part on the set and a good earth ground, as shown in figure 1.
3. Use an AC voltmeter, with 1000 ohms/volt or more sensitivity, to measure the potential across the resistor.
4. Check each exposed metallic part, and measure the voltage at each point.
5. Reverse the AC plug in the AC outlet and repeat each of the above measurements.
6. The potential at any point should not exceed 0.75 volts RMS. A leakage current tester (Simpson Model 229 or equivalent) may be used to make the hot checks, leakage current must not exceed 1/2 milliamp. In case a measurement is outside of the limits specified, there is a possibility of a shock hazard, and the equipment should be repaired and rechecked before it is returned to the customer.

PREVENTION OF ELECTROSTATIC DISCHARGE (ESD) TO ELECTROSTATICALLY SENSITIVE (ES) DEVICES

Some semiconductor (solid state) devices can be damaged easily by static electricity. Such components commonly are called Electrostatically Sensitive (ES) Devices. Examples of typical ES devices are integrated circuits, some field-effect transistors and semiconductor "chip" components. The following techniques should be used to help reduce the incidence of component damage caused by electrostatic discharge (ESD).

1. Immediately before handling any semiconductor component or semiconductor-equipped assembly, drain off any ESD on your body by touching a known earth ground. Alternatively, obtain and wear a commercially available discharging ESD wrist strap, which should remove electrostatic charge for potential shock reasons prior to applying power to the unit under test.
2. After removing an electrical assembly equipped with ES devices, place the assembly on a conductive surface such as aluminum foil, to prevent electrostatic charge buildup or exposure of the assembly.
3. Use only a grounded-tip soldering iron to solder or unsolder ES devices.
4. Use only an antistatic solder removal device. Some solder removal devices not classified as "antistatic (ESD protected)" can generate electrical charge sufficient to damage ES devices.
5. Do not use freon-propelled chemicals. These can generate electrical charges sufficient to damage ES devices.
6. Do not remove a replacement ES device from its protective package until immediately before you are ready to install it. (Most replacement ES devices are packaged with leads electrically shorted together by conductive foam, aluminum foil or comparable conductive material).
7. Immediately before removing the protective material from the leads of a replacement ES device, touch the protective material to the chassis or circuit assembly into which the device will be installed.

CAUTION: Be sure no power is applied to the chassis or circuit, and observe all other safety precautions.

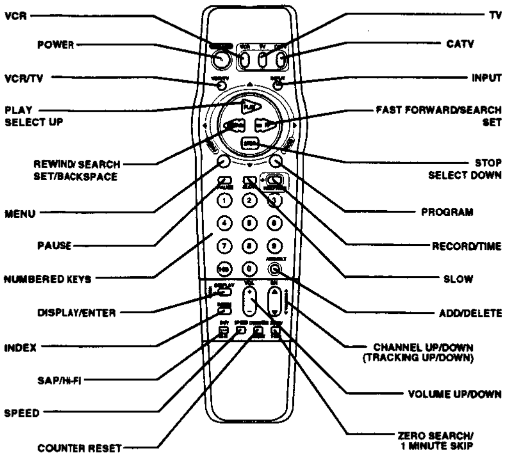
8. Minimize bodily motions when handling unpackaged replacement ES devices. (Otherwise harmless motion such as the brushing together of your clothes fabric or the lifting of your foot from a carpeted floor can generate static electricity (ESD) sufficient to damage an ES device).

"NOTE to CATV system installer:
This reminder is provided to call the CATV system installer's attention to Article 820-22 of the NEC that provides guidelines for proper grounding and, in particular, specifies that the cable ground shall be connected to the grounding system of the building, as close to the point of cable entry as practical".

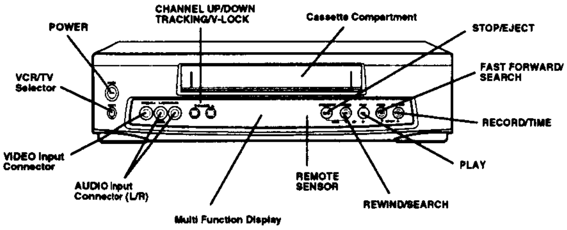
OPERATION GUIDE

Location of Controls

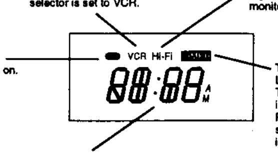
Remote Control Buttons


VCR
POWER
VCR/TV
PLAY
SELECT UP
REWIND/ SEARCH
SET/BACKSPACE
MENU
PAUSE
NUMBERED KEYS
DISPLAY/ENTER
INDEX
SAP/Hi-Fi
SPEED
COUNTER RESET
TV
CATV
INPUT
FAST FORWARD/SEARCH
SET
STOP
SELECT DOWN
PROGRAM
RECORD/TIME
SLOW
ADD/DELETE
CHANNEL UP/DOWN
(TRACKING UP/DOWN)
VOLUME UP/DOWN
ZERO SEARCH/
1 MINUTE SKIP

Front View of the VCR


POWER
CHANNEL UP/DOWN
TRACKING/V-LOCK
Cassette Compartment
STOP/EJECT
VCR/TV
Selector
FAST FORWARD/
SEARCH
RECORD/TIME
VIDEO Input
Connector
AUDIO Input
Connector (L/R)
REMOTE
SENSOR
PLAY
REWIND/SEARCH
Multi Function Display

Multi Function Display


VCR
Hi-Fi
88:88
AM

VCR Indicator
Lights when the VCR/TV selector is set to VCR.

Hi-Fi Indicator
Lights when Hi-Fi audio is monitored or played back.

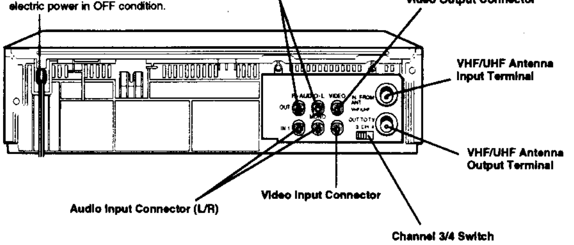
Power Indicator
Lights when power is on.

Timer Indicator
Lights when the VCR is set for a Timer Recording, or when a length is set for a normal recording.
Flashes when a Timer Recording is set, but a tape has not been inserted into the VCR.

Clock/Status/Channel/Speed Display
Displays the current time.
Briefly displays VCR status when a function button is pushed.
Briefly displays the channel number, or "L1" or "L2" when a channel or line input is selected.
Briefly displays the recording speed when SPEED is pushed.

Rear View of the VCR

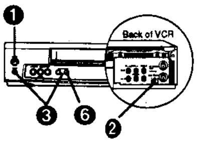
AC Power Plug
While plugged into an AC outlet, the VCR consumes 7W of electric power in OFF condition.

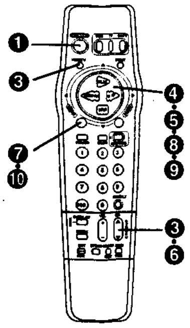

Audio Output Connector (L/R)
Video Output Connector
VHF/UHF Antenna
Input Terminal
VHF/UHF Antenna
Output Terminal
Audio Input Connector (L/R)
Video Input Connector
Channel 3/4 Switch

One Time VCR Setup

When the VCR power is first turned on, the language select and channel auto set screen appear automatically followed by a prompt to set the clock.

☑ **Check list before you begin.**
☐ All TV and VCR connections are made.


❶
Back of VCR
❸
❻
❷


❶
❸
❼
❿
❹
❺
❽
❾
❸
❻

Using ▲▼ ◀▶ keys

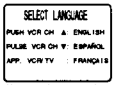
Whenever a menu or program screen is displayed, the PLAY, STOP, REWIND, and FF buttons on the remote control function as ▲▼ ◀▶ only. For play, stop, rewind, and fast forward functions, use the buttons on the VCR.

To Set the Language, Channels, and Clock

❶ Turn TV and VCR on.

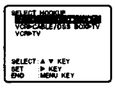
❷ Tune TV to VCR output channel (the same one you set on the back of the VCR; CH3 or CH4).

❸ Push CH ▲ for English on-screen displays.
or
Push CH ▼ for Spanish on-screen displays.
or
Push VCR/TV for French on-screen displays.

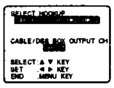

SELECT LANGUAGE
PUSH VCR CH ▲: ENGLISH
PULSE VCR CH ▼: ESPAÑOL
APP. VCR/TV : FRANÇAIS

- If wrong language is set, see the "Reset all VCR Memory Functions" section.
- You can also set the language using the buttons on the VCR.
- The VCR should be connected to an antenna or cable box.

❹ Push ▲▼ to select your hookup, and then push ▶ to set.
- If you selected CABLE/DSS BOX ▶VCR▶TV, continue with step 5. If not, go to step 6.

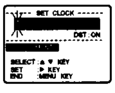

SELECT HOOKUP
VCR▶CABLE/DSS BOX▶TV
VCR▶TV
SELECT : ▲ ▼ KEY
SET : ▶ KEY
END : MENU KEY

❺ Push ▲▼ to select your cable box or DSS receiver output channel number, and then push ▶ to enter.
- If necessary, refer to your cable box manual.
- If you are using Audio/Video jack connections to your cable box, select and set "VIDEO OUT" as the output channel.


SELECT HOOKUP
CABLE/DSS BOX OUTPUT CH
SELECT : ▲ ▼ KEY
SET : ◀ ▶ KEY
END : MENU KEY

❻ Push CH ▲ to start Channel Auto Set.
- "PLEASE SET CLOCK BY PUSHING MENU KEY" appears.

❼ Push MENU to display the SET CLOCK screen.

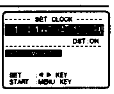

SET CLOCK
DST : ON
SELECT : ▲ ▼ KEY
SET : ▶ KEY
END : MENU KEY

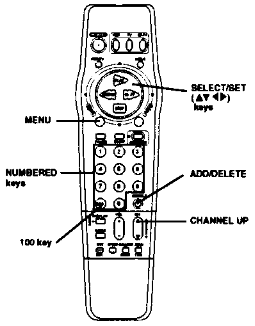
❽ Push ▲▼ to select the MONTH, and then push ▶ to enter.
- Make each entry within 5 minutes, or the VCR exits the Set Clock screen.

❾ Push ▲▼ and ◀▶ to select and set remaining items at right.
- Pushing ◀ will move back to an item for correction.

Remaining items to be set:
- Date
- Year
- Time
- D.S.T. (Daylight Saving Time)

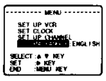
❿ Push MENU twice to start the clock and exit this mode.


SET CLOCK
DST : ON
SET : ◀ ▶ KEY
START : MENU KEY


SELECT/SET
(▲▼◀▶)
keys
MENU
NUMBERED
keys
ADD/DELETE
CHANNEL UP
100 key

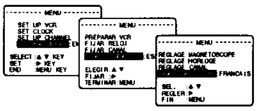
To Change On Screen Display Language

1 Push MENU to display the menu.


MENU
SET UP VCR
SET CLOCK
SET UP CHANNEL
: ENGLISH
SELECT : ▲ ▼ KEY
SET : ▶ KEY
END : MENU KEY

2 Push ▲▼ to select the language.
English: LANGUAGE
Spanish: IDIOMA
French: LANGUE

3 Push ▶ repeatedly to change the language.


MENU
SET UP VCR
SET CLOCK
SET UP CHANNEL
SELECT : ▲ ▼ KEY
SET : ▶ KEY
END : MENU KEY

MENU
PREPARAR VCR
FIJAR RELOJ
FIJAR CANAL
ELEGIR : ▲ ▼
FIJAR : ▶
TERMINAR : MENU

MENU
REGLAGE MAGNETOSCOPE
REGLAGE HORLOGE
REGLAGE CANAL
FRANCAIS
SEL. : ▲ ▼
REGLER : ▶
FIN : MENU

4 Push MENU to exit this mode.

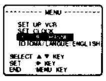
When Using the 100 key

When selecting CATV channels 100 to 125 with the NUMBERED keys, first push the 100 key and then enter the remaining two digits.
For example, to select channel 125:
Push NUMBERED keys 100, then 2, then 5.

To Replace Channels in Memory

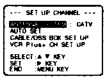
In case you have cable installed, etc.

1 Push MENU to display the menu.


MENU
SET UP VCR
SET CLOCK
IDIOMA/LANGUE: ENGLISH
SELECT ▲ ▼ KEY
SET : ▶ KEY
END : MENU KEY

2 Push ▲▼ to select "SET UP CHANNEL," and then push ▶ to display the "SET UP CHANNEL" screen.

3 Push ▲▼ to select "ANTENNA SYSTEM," and then push ▶ to set your antenna system (TV or CATV).


SET UP CHANNEL
: CATV
AUTO SET
CABLE/DSS BOX SET UP
VCR Plus+ CH SET UP
SELECT : ▲ ▼ KEY
SET : ▶ KEY
END : MENU KEY

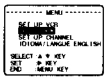
4 Push ▲▼ to select and ▶ to set "AUTO SET."
- If you use a cable box, it must be left on for auto channel set.

5 Push CH ▲ to start Channel Auto Set.
- To exit this mode, push MENU twice.

To Set or Reset the Clock

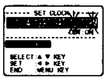
In case the clock is wrong, or a power failure occurred.

1 Push MENU to display the menu.


MENU
SET UP VCR
SET UP CHANNEL
IDIOMA/LANGUE ENGLISH
SELECT ▲ ▼ KEY
SET : ▶ KEY
END : MENU KEY

2 Push ▲▼ to select "SET CLOCK," and then push ▶ to display the "SET CLOCK" screen.

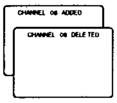
3 Push ▲▼ and ◀▶ to select and set the time and date.


SET CLOCK
DST : ON
SELECT : ▲ ▼ KEY
SET : ◀ ▶ KEY
END : MENU KEY

4 Push MENU twice to start the clock and exit this mode.

To Add or Delete a Channel

1 Select a channel using the NUMBERED keys to add or the CH ▲/▼ to delete.


CHANNEL 08 ADDED
CHANNEL 08 DELETED

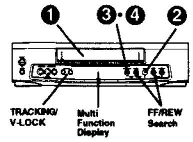
2 Push ADD/DLT to add or delete the channel.
- To select a channel once it's deleted, use the NUMBERED keys on the remote control.
Deleted channels will flash in the Multi Function Display on the VCR when selected.

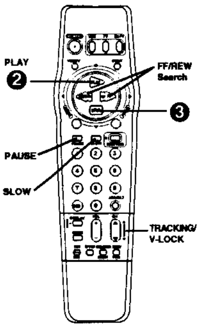
NOTES
- This VCR will accurately maintain its calendar up to Dec. 31, 2015, 11:59PM.
- Normal TV or Cable channels are automatically selected and placed in memory depending on how your VCR is hooked up.

Playback a Tape

Check list before you begin.

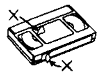
☐ All connections are made.
☐ TV and VCR are plugged in.
☐ TV is turned on and set to the VCR channel (CH 3 or 4).





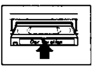
Caution:

Please inspect your cassette tapes for any loose or peeling labels as they may become jammed in your unit.

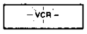


❶ Insert a cassette.

- VCR power comes on automatically.



This indicator lights in the Multi Function Display.



❷ Push PLAY on the remote or VCR to start playback.

- Playback begins automatically if cassette has no record tab.

❸ Push STOP on the remote or VCR to stop playback.

❹ Push STOP/EJECT on the VCR to eject the cassette.

- You may eject a cassette with power on or off.

To Find a Particular Scene During Playback

REW or FF

Push REW or FF during playback to search for a scene.

- Search speed for SP mode tapes is 9 times and SLP mode tapes 27 times the normal speed.
- Some noise bars will appear during search.

Special Effects During Playback

These features work best in SP or SLP mode. The sound will be muted.

Slow Motion Playback
Push SLOW to start slow motion playback.
Push PLAY or SLOW to release.

Still (Freeze) Frame Picture
Push PAUSE to freeze and release the picture.

- To reduce picture noise, first push SLOW. Then, use CH (TRACKING) ▲/▼ to clear up the picture, then push PAUSE.

Frame by Frame Advance
In Still mode, hold down SLOW to advance the still picture one frame at a time. Push PAUSE to release.

Features for a Quality Picture

Digital Auto Picture
This feature automatically controls the video output signal for less noise depending on the tape condition.

Digital Auto Tracking
This feature continuously analyzes the signal and adjusts for optimum picture quality.

Manual Tracking Control (to reduce picture noise)
Use during Playback and Slow Motion mode to reduce picture noise.
Push CH (TRACKING) ▲/▼ during playback until the picture clears up.
To return to Auto Tracking mode, push POWER off and then on again.

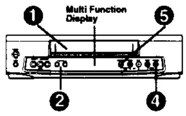
V-Lock Control (to reduce picture jitter)
In Still mode, CH (TRACKING) ▲/▼ operate as a V-Lock control. Push ▲/▼ until the picture is stabilized.

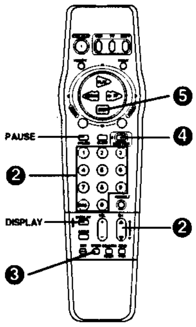
NOTE
- After the VCR is in Still or Slow mode for 3 minutes, it will switch to the Stop mode automatically to protect the tape and the video head.

Record On a Tape

Check list before you begin.

☐ All connections are made.
☐ VCR is Plugged in.
☐ TV is turned on and set to the VCR channel (CH3 or CH4).



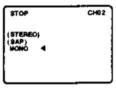


❶ Insert a cassette with record tab.

- VCR power comes on automatically.

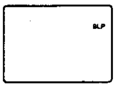
❷ Push CH ▲/▼ or NUMBERED keys to select a channel.

- Or, push CHANNEL ▲/▼ on the VCR.
- Holding down CH ▲/▼ will increase the channel search speed.
- To record from an outside source, push CH ▲/▼ or INPUT to select "LINE1" or "LINE2".



❸ Push SPEED to change the recording speed.

- SP = Standard Play
  LP = Long Play
  SLP = Super Long Play



❹ Push REC/TIME on the remote control or VCR to start recording.

- To edit out unwanted portions, push PAUSE to pause the recording in progress.
  To release, push PAUSE again.
  (After the VCR has been in Pause mode for 5 minutes, it will stop automatically to protect the tape and video head.)

One Touch Timer Recording (OTR)

The VCR starts recording and turns itself off at a preset time.

In step 4, push REC/TIME repeatedly to set the length of the recording. Each push will change the stop time as shown.

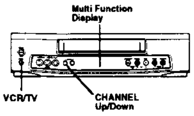
→Normal Rec →0:30→1:00
4:00←3:00←2:00←1:30←

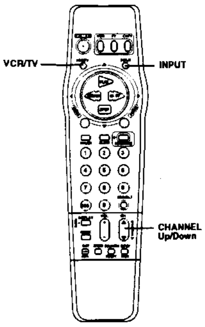
- "TIMER" lights in the Multi Function Display.
- The remaining recording time can be displayed by pushing DISPLAY in OTR mode.

❺ Push STOP to stop recording.

- Or, push STOP/EJECT on the VCR.

Record On a Tape (continued)





Selecting the Input Mode

Push INPUT. The display will change in the order below.

→ Channel Number → LINE1 → LINE2 →

or

Push CH ▲/▼. The display will change in the order below.

→ 1 — 2 — 3 — 125 (CATV) or 69 (TV) → LINE1 → LINE2 →

- LINE1: For rear audio/video connection.
  LINE2: For front audio/video connection.
- When LINE is selected, "L1" or "L2" is displayed in the Multi Function Display for about 4 seconds.

Record One Program While Watching Another

1 Push VCR/TV while recording is in progress to turn off the VCR indicator in the Multi Function Display.

2 Use the TV channel controls to select a program. The VCR will continue to record your program while you watch any channel you choose.

- To switch back and forth between the recording and viewing channel, push VCR/TV.

Selecting Channels at the VCR

1 Turn your TV and VCR on.

- VCR Indicator lights on the Multi Function Display. If indicator doesn't light, push VCR/TV to turn it on.

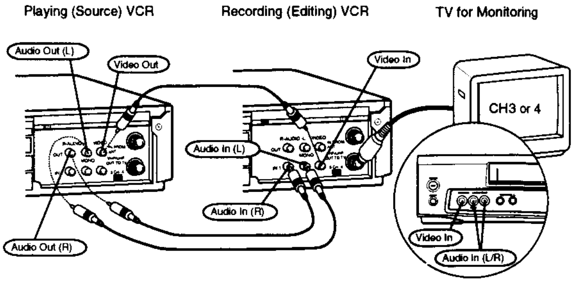
2 Use CH ▲/▼ on the remote control or VCR to select channels.

- To switch back to TV channel selection, push VCR/TV to turn VCR indicator off, or simply turn the VCR power off.

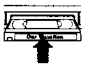
Copying Your Tapes (Dubbing)

Connections you'll need to make. (Choose front or rear connection.)

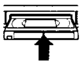
- When connecting to a normal VCR, use the L Audio In jack for proper sound reproduction.



① **Insert a pre-recorded tape** into the Playing (Source) VCR.



② **Insert a blank tape** with record tab into the Recording (Editing) VCR.



③ **Select "LINE" input mode** on the Recording (Editing) VCR. (See "Selecting the Input Mode".)

④ **Push PLAY** on the Playing VCR.
Push PAUSE at the desired starting point.

⑤ **Push REC** on the Recording VCR, and then **push PAUSE** immediately thereafter.

⑥ **Push PAUSE** on both VCRs at the same time, to begin copying.

To Edit Out Unwanted Parts
Push PAUSE on the recording VCR while copying is in progress. Push PAUSE again to resume copying.

⑦ **Push STOP** on both VCRs to stop copying.

To Monitor Dubbing on Your TV

1 Turn your TV on and tune to the Recording VCR channel (CH3 or CH4).

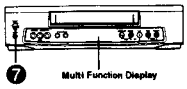
2 Set the VCR/TV Selector on the Recording VCR to "VCR."

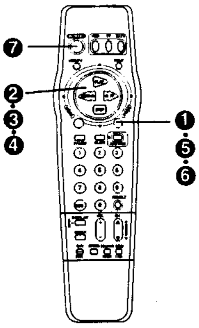
Caution:
Unauthorized exchanging and/or copying of copyrighted recordings may be copyright infringement.

Timer Recording

You can set up the VCR to record a one time, daily, or weekly program while you are away or otherwise occupied. Up to 8 programs can be stored in memory.

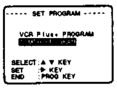
☑ Check list before you begin.
- ☐ All connections are made.
- ☐ TV and VCR are plugged in and turned on.
- ☐ VCR/TV selector is set to "VCR."
- ☐ Clock is set to correct time.
- ☐ Record tab in place.


7
Multi Function Display

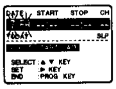


Important notes when using a DSS receiver
- When recording programs via a DSS receiver, the DSS receiver must be left on.
- When recording programs via an antenna or cable, the DSS receiver must be turned off.

❶ Push PROG to display the "SET PROGRAM" screen.


----- SET PROGRAM -----
VCR Plus+ PROGRAM
SELECT : ▲ ▼ KEY
SET : ▶ KEY
END : PROG KEY

❷ Push ▲▼ to select "TIMER PROGRAM," and then push ▶ to display the program screen.
- If a program is already in memory, push ▲▼ and ▶ to select an unused program number.


DATE START STOP CH
TODAY SLP
SELECT : ▲ ▼ KEY
SET : ▶ KEY
END : PROG KEY

❸ Push ▲▼ and ▶ to select and set one of the following:
- 1~31 =One time recording
- DAILY =Same time MON~FRI
- WEEKLY =Same time once a week

Example

Today's Date — 7 → 8 — 9 ······· 31 — 1 — 2 ····· 6 — DAILY — WEEKLY (SUN) — WEEKLY (MON) ······ WEEKLY (SAT) → 7

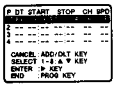
SELECT ▲ / ▼ Selection Order

❹ Push ▲▼ and ◀▶ to select and set each of the remaining items at right.

Remaining Items to be set:
- START time
- STOP time
- CH(annel) number, or LINE for outside source recording
- Speed (SP, LP, SLP)

To Make Corrections
Repeatedly push ▶ to move the cursor to the right, or ◀ to move to the left to the incorrect entry and make the correction.

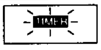
❺ Push PROG to end the program.
- This screen appears for confirmation.


P DT START STOP CH SPD
CANCEL : ADD/DLT KEY
SELECT 1-8 : ▲ ▼ KEY
ENTER : ▶ KEY
END : PROG KEY

To Enter More Programs
Push ▲▼ and ▶ to select and set a blank program number, and then repeat steps 3 and 4.

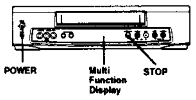
❻ Push PROG to exit this mode and return to the normal screen.

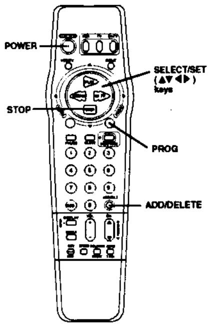
❼ Push POWER off to set the timer.
- When recording programs via a cable box, make sure the cable box is left ON and tuned to the desired channel.



Multi Function Display

NOTES
- A cassette with no record tab is ejected and TIMER indicator flashes when the power is turned off to set the timer.
- If the start times of two programs overlap, the lower numbered program will have priority.
- If the start time for a timer recording comes up during a normal recording or One Touch Recording, the timer recording will not be performed.
- If there is a power interruption of more than one minute, the recording will not be performed or continue.


POWER
Multi Function Display
STOP

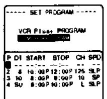

POWER
STOP
SELECT/SET (▲▼◀▶) keys
PROG
ADD/DELETE

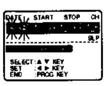
Cancel a Timer Recording:
(Recording is in progress)

Push POWER and then STOP within 10 seconds to cancel the timer recording.
- The TIMER indicator goes out in the Multi Function Display.

Replace Program Contents:
(Recording is not in progress)

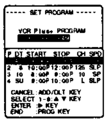
1. Push PROG to display the "SET PROGRAM" screen.
2. Push ▲▼ to select "TIMER PROGRAM," and then push ▶ to display all currently set programs.
3. Push ▲▼ and ▶ to select and set a program number.
4. Push ▲▼ and ◀▶ to select and set replacement timer information.
5. Push PROG twice to exit this mode.

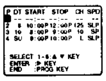

----- SET PROGRAM -----
VCR Plus+ PROGRAM
P DT START STOP CH SPD
2 8 10:00P 12:00P 125 SLP
3 10 8:00P 9:00P 10 SP
4 SU 8:00P 10:00P L SLP
SELECT 1-8 : ▲ ▼ KEY
ENTER : ▶ KEY
END : PROG KEY

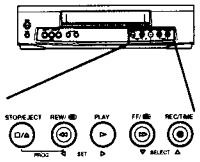

DATE START STOP CH
SLP
SELECT : ▲ ▼ KEY
SET : ◀ ▶ KEY
END : PROG KEY

Review or Clear Program Contents:
(Recording is not in progress)

1. Push PROG to display the "SET PROGRAM" screen.
2. Push ▲▼ to select "TIMER PROGRAM," and then push ▶ to display all currently set programs.
3. Push ▲▼ to select a program number.
4. Push ADD/DLT to clear the program.
5. Push PROG to exit this mode.


----- SET PROGRAM -----
VCR Plus+ PROGRAM
P DT START STOP CH SPD
2 8 10:00P 12:00P 125 SLP
3 10 8:00P 9:00P 10 SP
4 SU 8:00P 10:00P L SLP
CANCEL : ADD/DLT KEY
SELECT 1-8 : ▲ ▼ KEY
ENTER : ▶ KEY
END : PROG KEY


P DT START STOP CH SPD
2 8 10:00P 12:00P 125 SLP
3 10 8:00P 9:00P 10 SP
4 SU 8:00P 10:00P L SLP
SELECT 1-8 : ▲ ▼ KEY
ENTER : ▶ KEY
END : PROG KEY

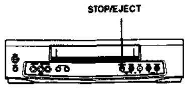

STOP/EJECT
REW/
PLAY
FF/
REC/TIME
PROG
SET
SELECT

Timer Recording Using VCR Buttons
(Make sure a cassette tape is not inserted in the VCR.)

1. Hold down STOP/EJECT and push REW to enter the Program mode.
2. Push FF or REC/TIME repeatedly or hold down to make selections.
3. Push PLAY to set the item and move on.
   - To make corrections, repeatedly push PLAY to move the cursor to the right, or REW to move to the left to the incorrect entry and make the correction.
4. Push STOP/EJECT and REW together to display program contents after all items have been entered.
   - You cannot clear programs with the VCR buttons.
5. Hold down STOP/EJECT and push REW, (release REW first, and then release STOP/EJECT) to exit this mode.
6. Insert a cassette with record tab and push POWER off to set the timer.

Special VCR Features

☑ Check list before you begin.
- ☐ All connections are made.
- ☐ VCR is Plugged in.
- ☐ TV is turned on and set to the VCR channel (CH3 or CH4).



VCR Lock Feature

When activated, this feature prohibits all operations except for timer recording and tape eject. This feature is used to keep children from operating the VCR.

Hold down STOP/EJECT on the VCR for 7 seconds while in Stop or Power OFF mode.

VCR LOCK ACTIVATED

To Cancel the VCR Lock feature,

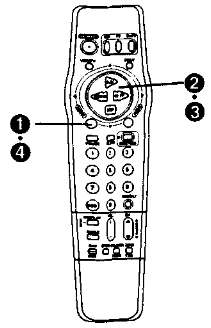
hold down STOP/EJECT on the VCR for 7 seconds again while in Stop or Power OFF mode.

VCR LOCK OFF

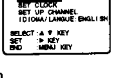
- VCR Lock mode is cancelled automatically after 24 hours as long as the clock is set.

Warning Beeper Feature

When you select BEEPER ON, a short warning will sound each time an invalid entry or incomplete operation is made.

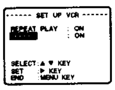


❶ Push MENU to display the menu.


--------- MENU ---------
SET CLOCK
SET UP CHANNEL
IDIOMA/LANGUE : ENGLISH
SELECT : ▲ ▼ KEY
SET : ▶ KEY
END : MENU KEY

❷ Push ▲▼ to select "SET UP VCR," and then push ▶ to display the "SET UP VCR" screen.

❸ Push ▲▼ to select "BEEPER," and then push ▶ to select "ON" or "OFF."

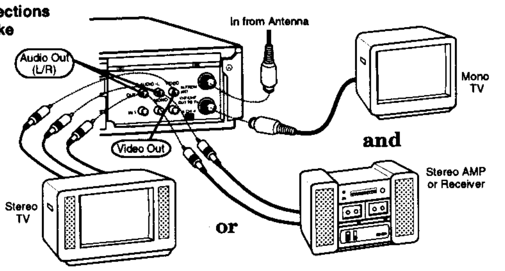

------ SET UP VCR ------
REPEAT PLAY : ON
: ON
SELECT : ▲ ▼ KEY
SET : ▶ KEY
END : MENU KEY

❹ Push MENU twice to exit this screen.

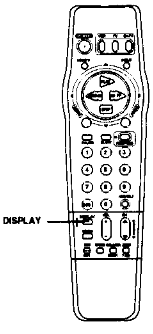
MTS Broadcast/ VHS Hi-Fi Stereo System

☑ Check list before you begin
- ☐ The VCR is connected to a stereo TV, or a mono TV and an external stereo amp or receiver with speakers.
- ☐ The VCR and other components are plugged in and turned on.

Connections to Make


In from Antenna
Audio Out (L/R)
Video Out
Mono TV
and
Stereo AMP or Receiver
Stereo TV
or

When recording, you may monitor in stereo, by connecting the VCR to either a stereo TV, or a mono sound TV with an external stereo amp and speakers.



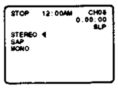
Equipped with dbx® -TV Noise Reduction for true MTS reproduction. dbx® -TV Noise Reduction is required for good stereo separation and audio fidelity. dbx® is a registered trademark, and is licensed by dbx® Technology Licensing.

Receivable Broadcast Types

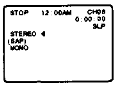
The following are possible audio broadcast types and on-screen displays. Parenthesis indicate signal(s) not being received. The arrow indicates the selected audio mode.

Push DISPLAY to display the broadcast signal currently being received.

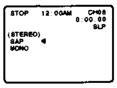
MTS Stereo and SAP broadcast
Multi-channel Television Sound Stereo (main language) and Secondary Audio Program (sub language) broadcasts are being received simultaneously. Select STEREO or SAP audio mode.


STOP 12:00AM CH08
0:00:00
SLP
STEREO ◀
SAP
MONO

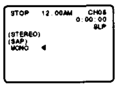
MTS Stereo broadcast
Multi-channel Television Sound Stereo broadcast. Select STEREO audio mode.
- If a stereo broadcast is weak and the display flickers, you may want to select the MONO audio mode for better results.


STOP 12:00AM CH08
0:00:00
SLP
STEREO ◀
(SAP)
MONO

SAP broadcast
Secondary Audio Program (sub language) broadcast. Select SAP audio mode for the sub language.


STOP 12:00AM CH08
0:00:00
SLP
(STEREO)
SAP ◀
MONO

MONO broadcast
Normal monaural sound broadcast.

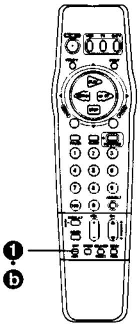

STOP 12:00AM CH08
0:00:00
SLP
(STEREO)
(SAP)
MONO ◀

MTS Broadcast/ VHS Hi-Fi Stereo System (continued)

With the proper audio mode setting, your VCR can:

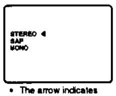
1) record and playback an MTS stereo broadcast (main language) in stereo Hi-Fi.
2) record and playback a monaural broadcast (main language) or Secondary Audio Program (sub language) on the Hi-Fi tracks for better quality monaural sound.
3) playback non Hi-Fi tapes in monaural.

- When recording, the selected broadcast sound is always recorded on the left and right Hi-Fi tracks as well as the normal monaural track. This means your tapes can be played back on Hi-Fi as well as non-Hi-Fi VCRs.



Audio Mode for Recording

❶ Push SAP/Hi-Fi repeatedly (each push within 5 seconds) to select the desired audio mode (STEREO, SAP, or MONO).


STEREO ◀
SAP
MONO

- The arrow indicates your selection.

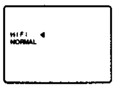
- Please refer to the "Receivable Broadcast Types" section.

❷ Do a recording.
See the "Record On a Tape" section.

Audio Mode for Playback

ⓐ Playback the tape.
See the "Playback a Tape" section.

ⓑ Push SAP/Hi-Fi repeatedly (each push within 5 seconds) to select the desired audio mode (HIFI or NORMAL).


HIFI ◀
NORMAL

- The arrow indicates your selection.

- Select "HIFI" to listen to your stereo recordings with stereo sound, or "NORMAL" for monaural sound.

NOTES
- When purchasing or renting prerecorded tapes, remember that only those recorded in Hi-Fi stereo will play back with true stereo sound. Standard stereo tapes will play back with monaural sound.
- In order to listen to Hi-Fi stereo playback, the VCR AUDIO (L/R) jacks must be connected to a stereo TV or an external stereo amp and speakers.
- When adjusting the tracking during playback, the Hi-Fi audio sound may revert to normal audio sound. This is normal.
- There may be a difference in audio level between Hi-Fi and normal audio playback.

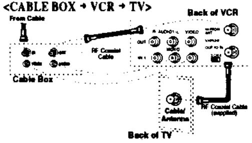
VCR Plus+ Setup

VCR Plus+ programming allows you to set most items of a timer recording by simply entering a special code (PlusCode) found in *TV GUIDE* magazine as well as the TV listings in selected newspapers. In order for your VCR to do a VCR Plus+ recording, or a timer recording of cable stations, some setup is required.

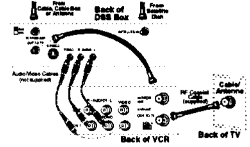
At first, choose your Connection Type.
(Then, follow the instructions under the diagram.)

Connection Type A

<CABLE BOX → VCR → TV>


Back of VCR
From Cable
RF Coaxial Cable
Cable Box
Cable/ Antenna
RF Coaxial Cable (supplied)
Back of TV

Or, <ANT/CABLE BOX → DSS BOX → VCR → TV>

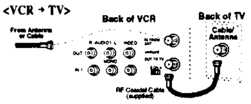

From Cable, Cable Box or Antenna
Back of DSS Box
From Satellite Dish
Audio/Video Cables (not supplied)
RF Coaxial Cable (supplied)
Cable/ Antenna
Back of VCR
Back of TV

If your system connection looks like one of the diagrams above, do the following.

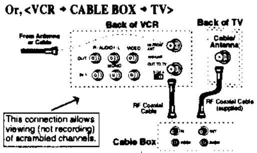
1. **Complete "Cable Box Setup" at right.**
2. **Go directly to "VCR Plus+ Programming."**

Connection Type B

<VCR → TV>


Back of VCR
Back of TV
From Antenna or Cable
Cable/ Antenna
RF Coaxial Cable (supplied)

Or, <VCR → CABLE BOX → TV>


Back of VCR
Back of TV
From Antenna or Cable
Cable/ Antenna
RF Coaxial Cable
RF Coaxial Cable (supplied)
Cable Box

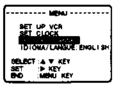
This connection allows viewing (not recording) of scrambled channels.

If your system connection looks like one of the diagrams above, do the following.

1. **Skip "Cable Box Setup" at right and turn to "VCR Plus+ Channel Setup."**
2. **Complete "VCR Plus+ Channel Setup."**
3. **Turn to "VCR Plus+ Programming."**

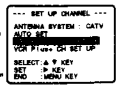
Cable Box Setup
For Connection Type A (see left) only

❶ Push MENU to display the menu.

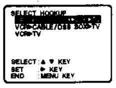

MENU
SET UP VCR
SET CLOCK
IDIOMA/LANGUE: ENGLISH
SELECT : ▲ ▼ KEY
SET : ▶ KEY
END : MENU KEY

❷ Push ▲▼ to select "SET UP CHANNEL," and then push ▶ to display the "SET UP CHANNEL" screen.

❸ Push ▲▼ to select "CABLE/ DSS BOX SET UP," and then push ▶ to display the "SELECT HOOKUP" screen.

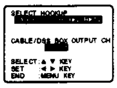

SET UP CHANNEL
ANTENNA SYSTEM : CATV
AUTO SET
VCR Plus+ CH SET UP
SELECT : ▲ ▼ KEY
SET : ▶ KEY
END : MENU KEY

❹ Push ▲▼ to select your hookup, and then push ▶ to set.


SELECT HOOKUP
VCR▶CABLE/DSS BOX▶TV
VCR▶TV
SELECT : ▲ ▼ KEY
SET : ▶ KEY
END : MENU KEY

- If you selected CABLE/DSS BOX▶VCR▶TV, continue with step 5.
If not, push MENU three times and turn to "VCR Plus+ Channel Setup".

❺ Push ▲▼ to select your cable box or DSS receiver output channel number, and then push ▶ to enter.


SELECT HOOKUP
CABLE/DSS BOX OUTPUT CH
SELECT : ▲ ▼ KEY
SET : ◀ ▶ KEY
END : MENU KEY

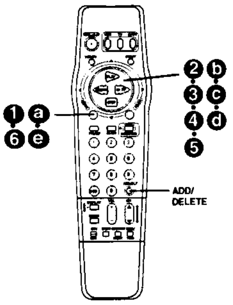
- If necessary, refer to your cable box manual.
- If you are using Audio/Video jack connections to your cable box, select and set "VIDEO OUT" as the output channel.

❻ Push MENU twice to end the setup and return to the normal screen.

Go directly to "VCR Plus+ Programming".

VCR Plus+ Setup (continued)

In order for the VCR to read the VCR Plus+ code, some set up is required. A Guide (VCR Plus+) channel number is assigned to each local broadcast and cable station. Because this number sometimes differs from the channel your TV receives the station on, it is necessary to program the VCR with local channel information.


❷ ⓑ
❸ ⓒ
❹ ⓓ
❺
❶ ⓐ
❻ ⓔ
ADD/ DELETE

Channel Setup Preparations

NOTE: Complete the steps on this page if your VCR hook-up resembles "B".

Prepare a list like the example below.
This list will help you smoothly enter the information needed in step "d" at right.

You will need the following to complete the list:

- A line up of normal and/or cable stations you receive along with the channel numbers your TV receives them on. A cable channel line-up chart is supplied by your cable company.
- A list of Guide (VCR Plus+) channel numbers assigned to the stations you receive. This list is available in *TV Guide* and the TV listings found in selected newspapers.

1 Make a chart with 3 columns like the example below. In the left column, fill in the name or call letters of the stations you receive.

2 In the middle column, fill in each station's assigned Guide (VCR Plus+) number found in TV Guide, newspapers, etc.

3 In the right column, fill in the channel number that your TV receives the station on from your channel line-up.

EXAMPLE ONLY

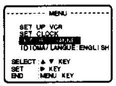
Broadcast or Cable Station Name	Assigned Guide (VCR Plus+) channel no.	Channel no. your TV receives the station on
HBO	33	15
Nickelodeon	38	20
CBS	04	04
FOX	11	

VCR Plus+ Channel Setup
For Connection Type B only

- **Before you begin, complete the Channel Setup Preparations below left.**

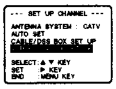
Important Note:
If your VCR connection type changes from type A to B, repeat steps 1-4 and select VCR▶CABLE/DSS BOX▶TV or VCR▶TV before proceeding with these steps.

ⓐ Push MENU to display the menu.


MENU
SET UP VCR
SET CLOCK
IDIOMA/LANGUE: ENGLISH
SELECT : ▲ ▼ KEY
SET : ▶ KEY
END : MENU KEY

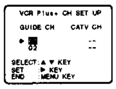
ⓑ Push ▲▼ to select "SET UP CHANNEL," and then push ▶ to display the "SET UP CHANNEL" screen.

ⓒ Push ▲▼ to select "VCR Plus+ CH SET UP," and then push ▶ to display the "VCR Plus+ CH SET UP" screen.


SET UP CHANNEL
ANTENNA SYSTEM : CATV
AUTO SET
CABLE/DSS BOX SET UP
SELECT : ▲ ▼ KEY
SET : ▶ KEY
END : MENU KEY

IMPORTANT NOTE:
For step "d," use the list you prepared. You may leave lines blank if you don't receive that station, or if the GUIDE CH number and the CATV (or TV) CH numbers are the same.

ⓓ Push ▶ to move the shaded area to the right side.

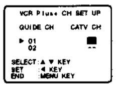

VCR Plus+ CH SET UP
GUIDE CH
CATV CH
▶ 01
02
--
--
SELECT : ▲ ▼ KEY
SET : ▶ KEY
END : MENU KEY

Then, push ▲▼ to change CATV or TV CH number.

Next, push ◀ to set the number.

Now, push ▲▼ to continue.

Repeat this operation until the list is complete.


VCR Plus+ CH SET UP
GUIDE CH
CATV CH
▶ 01
02
--
SELECT : ▲ ▼ KEY
SET : ◀ KEY
END : MENU KEY

To Make Corrections
Push ▲▼ and ▶ to select the incorrect CATV or TV CH number. Then, push ▲▼ to change, or ADD/DLT to delete the channel.

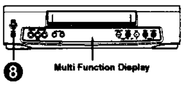
ⓔ Push MENU three times to exit the VCR Plus+ CH SET UP mode.

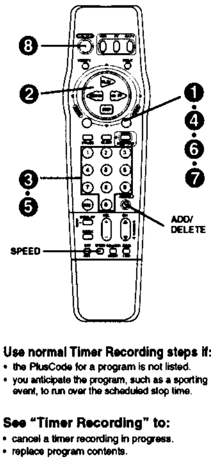
NOTES
- Make each entry within 5 minutes or the VCR will leave this mode.
- Once local channels have been programmed, they will stay in memory, even in the case of a power failure.

VCR Plus+ and PlusCode are trademarks of Gemstar Development Corporation. The VCR Plus+ system is manufactured under license from Gemstar Development Corporation.

VCR Plus+ Programming

☑ **Before you begin, make sure...**
☐ The clock is set.
☐ VCR Plus+ Setup is complete.


❽
Multi Function Display

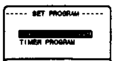

❽
❷
❶ ❹ ❻ ❼
❸ ❺
ADD/ DELETE
SPEED

Use normal Timer Recording steps if:
- the PlusCode for a program is not listed.
- you anticipate the program, such as a sporting event, to run over the scheduled stop time.

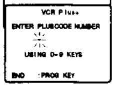
See "Timer Recording" to:
- cancel a timer recording in progress.
- replace program contents.
- review or clear program contents once set.

Important notes when using a DSS receiver
- When recording programs via a DSS receiver, the DSS receiver must be left on.
- When recording programs via an antenna or cable, the DSS receiver must be turned off.

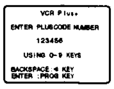
❶ Push PROG to display the "SET PROGRAM" screen.


SET PROGRAM
TIMER PROGRAM

❷ Push ▲▼ to select "VCR Plus+ PROGRAM," and then push ▶ to display the "VCR Plus+" screen.


VCR Plus+
ENTER PLUSCODE NUMBER
USING 0-9 KEYS
END : PROG KEY

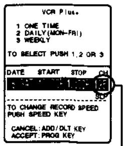
❸ Push the NUMBERED keys to enter the PlusCode number.
- Refer to your local TV listings.


VCR Plus+
ENTER PLUSCODE NUMBER
123456
USING 0-9 KEYS
BACKSPACE : ◀ KEY
ENTER : PROG KEY

To Make Corrections
Push ◀ repeatedly to delete the PlusCode number. Then, enter the correct number.

❹ Push PROG to lock in your program.

❺ Push the **1, 2 or 3** key to select the program type.

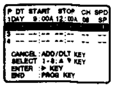

VCR Plus+
1 ONE TIME
2 DAILY(MON-FRI)
3 WEEKLY
TO SELECT PUSH 1,2 OR 3
DATE
START
STOP
CH
SLP
TO CHANGE RECORD SPEED PUSH SPEED KEY
CANCEL : ADD/DLT KEY
ACCEPT : PROG KEY

To change the recording speed:
Push SPEED for SP, LP or SLP.

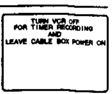
To cancel program contents:
Push ADD/DLT.

- If you use connection type "A", the channel shown in this on-screen display will always be the cable box output channel number.

❻ Push PROG if contents are acceptable.


P DT START STOP CH SPD
1DAY 9:00A 12:00A 08 SP
CANCEL : ADD/DLT KEY
SELECT 1-8 : ▲ ▼ KEY
ENTER : ▶ KEY
END : PROG KEY

❼ Push PROG to complete the program.


TURN VCR OFF
FOR TIMER RECORDING
AND
LEAVE CABLE BOX POWER ON

- If you're using a Cable Box, make sure that it is tuned to the desired channel and the power is left on for timer recording.
- This display may differ depending on your cable box hook-up.

❽ Push POWER off to set the timer.

Multi Function Display

NOTES
- For a list of publications that carry the PlusCode numbers in your area, call 1 - 800 - 258 - 4827.
- You can obtain unlisted PlusCode numbers by calling 1 - 900 - 454 - 7587. Call costs approximately $.95 per minute.
- VCR PlusCodes can not be used to program the VCR to record DSS channels.
- Avoid overlapping program times.
- An on-screen display will indicate if an invalid PlusCode number has been entered or when all timer programs are full.

SERVICE NOTES

Simplified Fault Finding Data

(With F.I.P. Model)

Simplified Self-Diagnostic System facilitates finding the cause of the fault. A 4 digit fault code will be displayed in F.I.P. The Simplified Fault finding data is memorized for approximately 12 hours. This data is cleared after it is displayed and then, the Power button is pressed back on.

1. With power turned off, press PLAY button on VCR (for over 3 seconds if VCR is not in shut off condition).

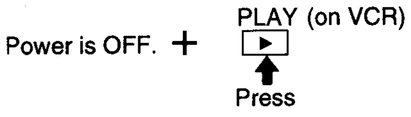

Power is OFF. +
PLAY (on VCR)
▶
Press

Fig. 1-1

2. Fault code (4 digit number) will be displayed in F.I.P. as shown.

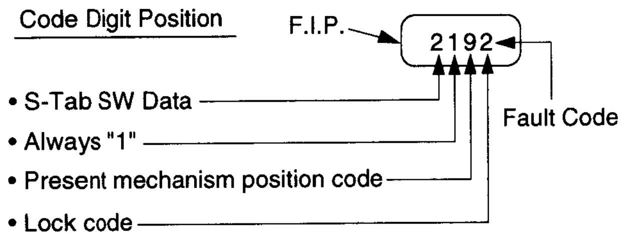
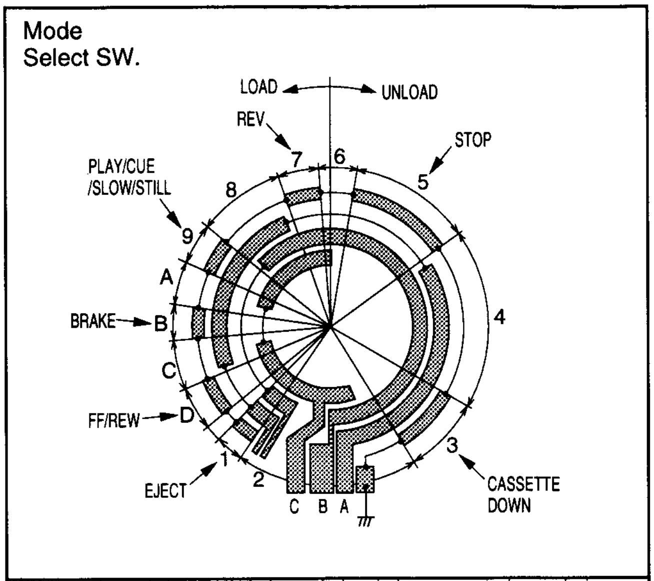

Code Digit Position
F.I.P.
2192
Fault Code
• S-Tab SW Data
• Always "1"
• Present mechanism position code
• Lock code

Fig. 1-2

Explanation of Codes	Code No.			
S-Tab SW Data				
• S-Tab SW is off.	1			
• S-Tab SW is on.	2			
Not applicable		1		
Present Mechanism Position Code Mechanism Position is indicated. (Refer to Fig. 1-4.)			1 2 3 4 5 6 7 8 9 A B C D	
Lock Code (See Note 1.)				
• VCR is not in shut-off condition.				0
• Reel lock.				1
• Cylinder lock.				2
• Exceeds loading/unloading time. (Mechanism Lock)				3
• Exceeds Cassette loading/unloading time. (Cassette Lock)				
Tape Unloading (direction)			1	4
Tape Loading (direction)			2	4

Fig. 1-3


Mode
Select SW.
LOAD
UNLOAD
REV
STOP
PLAY/CUE
/SLOW/STILL
7
6
5
8
9
A
4
BRAKE
B
C
FF/REW
D
3
1
EJECT
2
C B A
CASSETTE
DOWN

Mechanism position	EJECT		CASSETTE DOWN		STOP/ STBY		REV		PLAY/CUE/ SLOW/STILL		BRAKE		FF/REW
position code	1	2	3	4	5	6	7	8	9	A	B	C	D

Fig. 1-4

3. While pressing down PLAY button on VCR with power turned off, press any operation button on either VCR, or remote to detect that a key has been pressed.
1st digit changes to "0" only when key is detected.

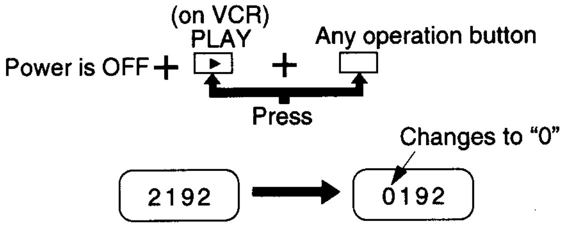

(on VCR)
PLAY
Any operation button
Power is OFF +
▶
+
Press
Changes to "0"
2192
0192

Fig. 1-5

Note:

1. When 1 to 4 listed in Lock code occurs, the VCR goes into VCR shut-off condition. VCR stops and all VCR function buttons except for power become non-operational.

(Without F.I.P. Model)

Simplified Self-Diagnostic System facilitates finding the cause of the fault. Rec LED and/or Timer LED will light up or flash. The Simplified Fault finding data is memorized for approximately 12 hours. This data is cleared after it is displayed with the PLAY button and then the Power button is pressed back on.

1. With power turned off, press PLAY button on VCR (for over 3 seconds if VCR is not in shut off condition).

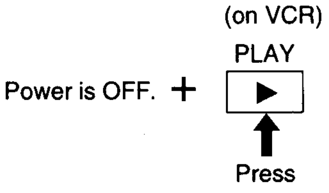

(on VCR)
PLAY
Power is OFF. +
Press

Fig. 1-6

2. Fault indication with the LED will be displayed .

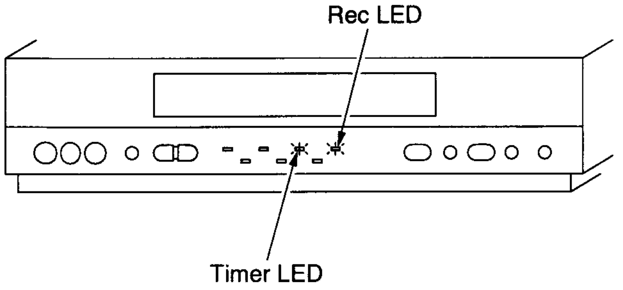

Rec LED
Timer LED

Fig. 1-7

Information	LED
Takeup Reel Lock	Timer LED lights up
Cylinder Lock	Rec LED lights up
Exceeds Loading/Unloading Time	Timer and Rec LED lights up
Exceeds Cassette Loading/Unloading Time	Timer and Rec LED flash

Fig. 1-8

Extension Cable Kit for Service

Use Extension Cable Kit (VUZS0002) when checking and servicing the unit.

Note:
3 types of Extension Cable -2 are included in this kit. Since there is a difference in the number of P3501 Head Amp C.B.A. pins between 2 Head, 4 Head, and Hi-Fi models, be sure to use the proper cable.

Extension Cable Kit (VUZS0002)

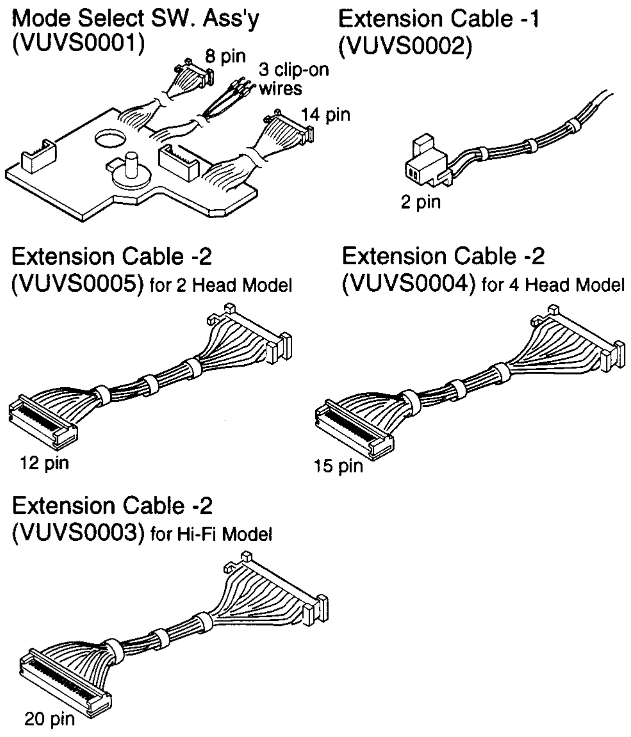

Mode Select SW. Ass'y
(VUVS0001)
8 pin
3 clip-on wires
14 pin
Extension Cable -1
(VUVS0002)
2 pin
Extension Cable -2
(VUVS0005) for 2 Head Model
12 pin
Extension Cable -2
(VUVS0004) for 4 Head Model
15 pin
Extension Cable -2
(VUVS0003) for Hi-Fi Model
20 pin

Fig. 2-1

How to place the unit in the Service Position

1. Connect the Extension Cables and secure them with tape as shown. When recording, cover the Safety Tab SW. with masking tape to turn this SW. on.
2. Set Mode Select SW. on the Main C.B.A. to Service Position.
3. Plug the AC plug into an AC outlet.
4. Insert a cassette.
   The power comes on, the tape is fully loaded, and the unit goes into the STOP Mode.
5. Place a jumper between TP6001 and GND to place the unit in Service Mode.
6. Check and/or repair the unit.
7. Press the STOP/EJECT button to eject the cassette.

Note:
When inserting a cassette again, remove the jumper between TP6001 and GND and insert the cassette. Then, reconnect the jumper.

8. After servicing, remove the jumper between TP6001 and GND to release the unit from Service Mode.

Extension Cable Kit Connections:

Extension Cable -1: Full Erase Head Connector on the Mechanism Chassis Unit ~ P4001 on the Main C.B.A.
Note: No change in performance if pins are reversed.

Extension Cable -2: P3501 on the Head Amp C.B.A. ~ P3001 on the Main C.B.A.

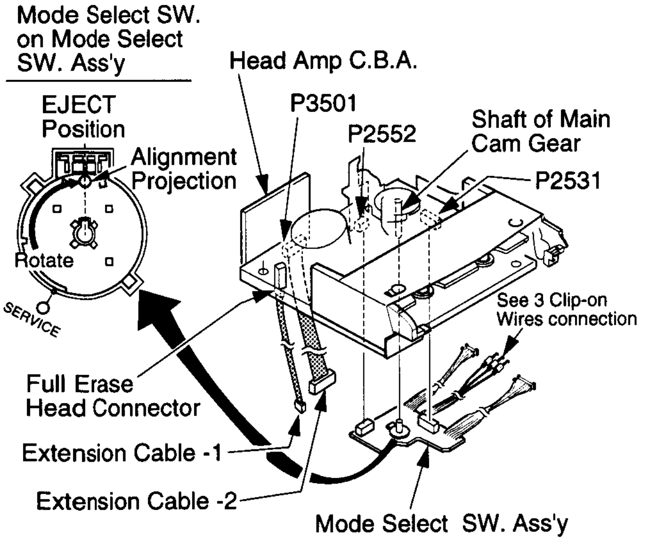
Mode Select SW. Ass'y: a) 3 Clip-on Wires ~ Mode Select SW. Connector on the Main C.B.A.

1 Pin (Not Used)
Red Wire ~ 2 pin
Orange Wire ~ 3 pin
Yellow Wire ~ 4 pin

b) 8 Pin Connector ~ P6002 on the Main C.B.A.

c) 14 Pin Connector ~ P6201 on the Main C.B.A.

d) Set Mode Select SW. on the Mode Select SW. Ass'y to EJECT position and install onto Mechanism Chassis


Mode Select SW. on Mode Select SW. Ass'y
EJECT Position
Alignment Projection
Rotate
SERVICE
Head Amp C.B.A.
P3501
P2552
Shaft of Main Cam Gear
P2531
See 3 Clip-on Wires connection
Full Erase Head Connector
Extension Cable -1
Extension Cable -2
Mode Select SW. Ass'y

3 Clip-on Wires connection

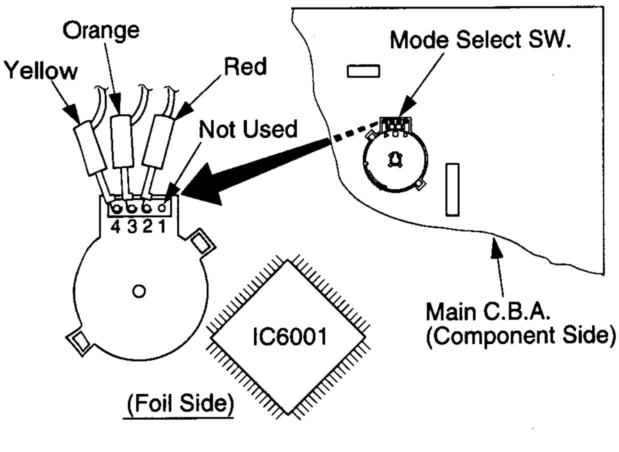

Orange
Yellow
Red
Not Used
4 3 2 1
Mode Select SW.
IC6001
Main C.B.A. (Component Side)
(Foil Side)

Fig. 2-2

Service Position (1)

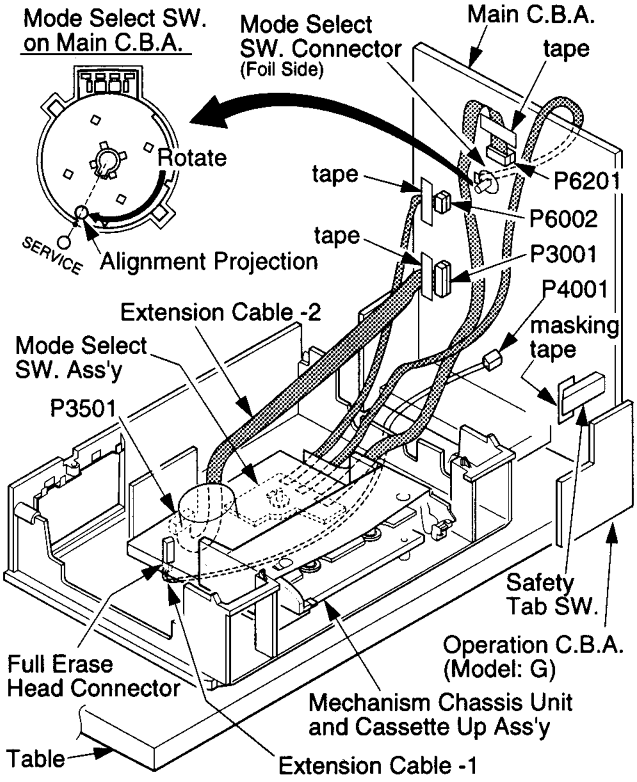

Mode Select SW. on Main C.B.A.
Mode Select SW. Connector (Foil Side)
Main C.B.A.
tape
Rotate
tape
P6201
P6002
tape
P3001
SERVICE
Alignment Projection
P4001
Extension Cable -2
masking tape
Mode Select SW. Ass'y
P3501
Safety Tab SW.
Operation C.B.A. (Model: G)
Full Erase Head Connector
Mechanism Chassis Unit and Cassette Up Ass'y
Table
Extension Cable -1

Fig. 2-3

Service Position (2)

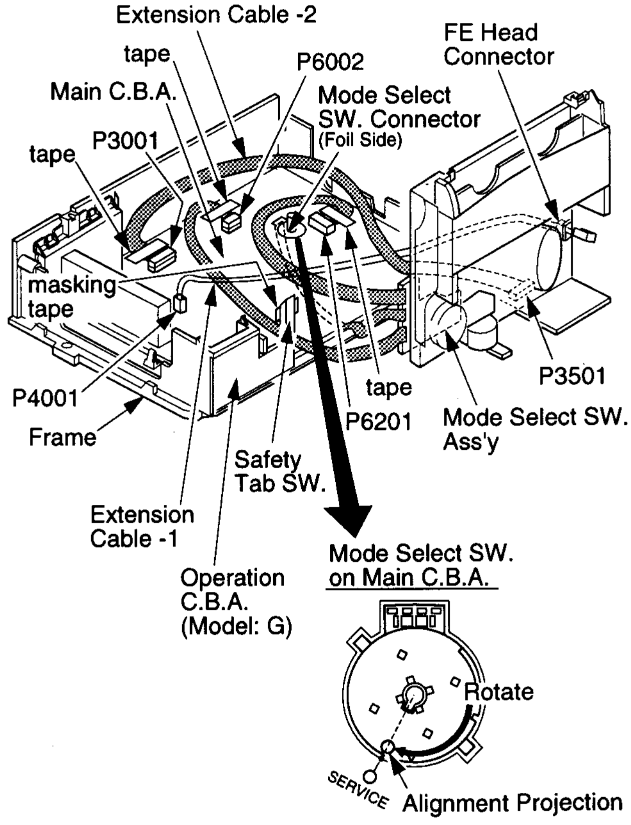

Extension Cable -2
FE Head Connector
tape
P6002
Main C.B.A.
Mode Select SW. Connector (Foil Side)
tape
P3001
masking tape
tape
P3501
P4001
P6201
Mode Select SW. Ass'y
Frame
Safety Tab SW.
Extension Cable -1
Operation C.B.A. (Model: G)
Mode Select SW. on Main C.B.A.
Rotate
SERVICE
Alignment Projection

Fig. 2-4

Service Mode

In order to inhibit detection of the Supply & Takeup Photo Transistors, Reel Sensor, and Cylinder Lock, press VCR/TV button and CH down button together on VCR for over 5 seconds in power off condition.

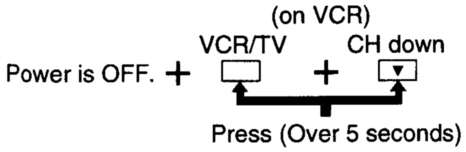

(on VCR)
VCR/TV
CH down
Power is OFF. +
+
Press (Over 5 seconds)

Fig. 3

The power comes on and the unit goes into service mode.

In this mode, Mechanism movement can be confirmed. When removing Cassette Up Ass'y or loading mecanism manually, it can be confirmed without a cassette.

To release from this mode, press POWER button off or disconnect AC Plug.

(Alternative method) Ground the TP6001.

Defeating the Auto Tracking

To defeat the Auto Tracking Function, place the instrument in the STOP mode and place a jumper between TP6003 and TP6009 on the Main C.B.A. The tracking will be placed in the neutral position.

How to set Tracking to the Neutral Position

Ejecting the cassette tape and then reinserting it will reset the tracking to the Neutral position.

How to reset all VCR Memory functions

To reset (clear) the select language, channel auto set and set clock functions to their initial power on condition (power on, **no** cassette inserted), hold down the PLAY and CH UP buttons together on the unit for more than 5 seconds.
Power will shut off.

Method for Manual Loading / Unloading of Mechanism

Turn the Main Cam Gear counterclockwise (for loading) or clockwise (for unloading) using needlenose pliers etc.

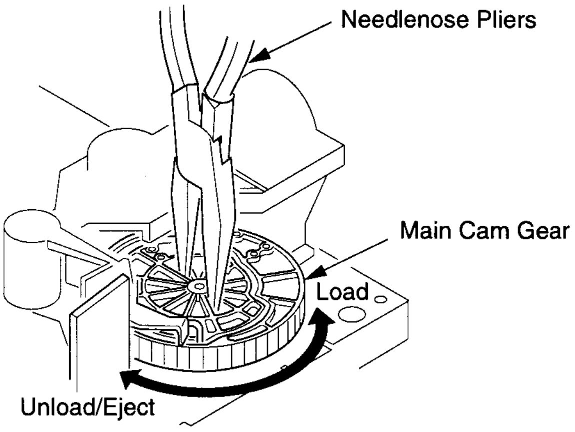

Needlenose Pliers
Main Cam Gear
Load
Unload/Eject

Fig. 4-1

When loading without a cassette, press Portion "a" on both sides of the Holder Unit of Cassette Up Ass'y so that the Lever clears Tab and Hole.

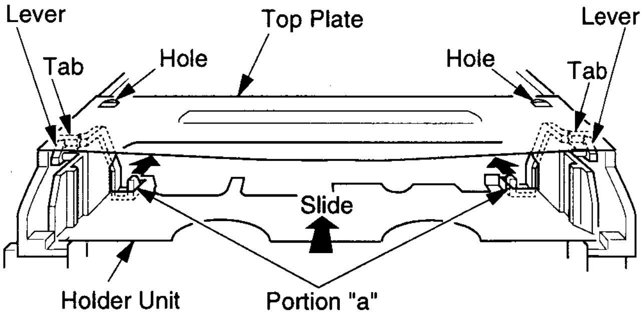

Lever
Top Plate
Lever
Tab
Hole
Hole
Tab
Slide
Holder Unit
Portion "a"

Fig. 4-2

How to Remove a jammed Tape

Manual Method

When a tape jam is encountered, check the tape loading condition and use the following procedure to remove a tape jam.

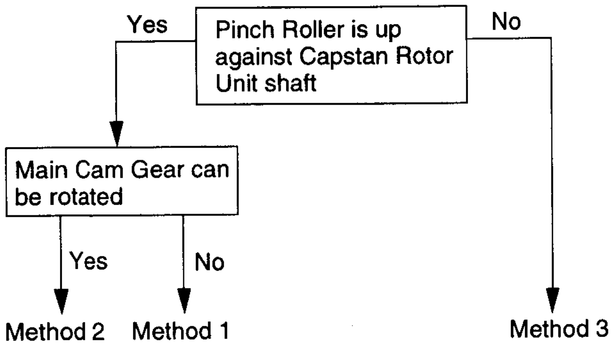

Yes
Pinch Roller is up against Capstan Rotor Unit shaft
No
Main Cam Gear can be rotated
Yes
No
Method 2
Method 1
Method 3

Fig. 5-1

Method -1:

1. While releasing 2 Locking Tabs (A) of Opener Piece, pull the Opener Piece up as far as you can.
2. Move the pin of Pinch Arm Unit out of the groove of the Main Cam Gear so that the Pinch Roller is separated from the shaft of the Capstan Rotor Unit.

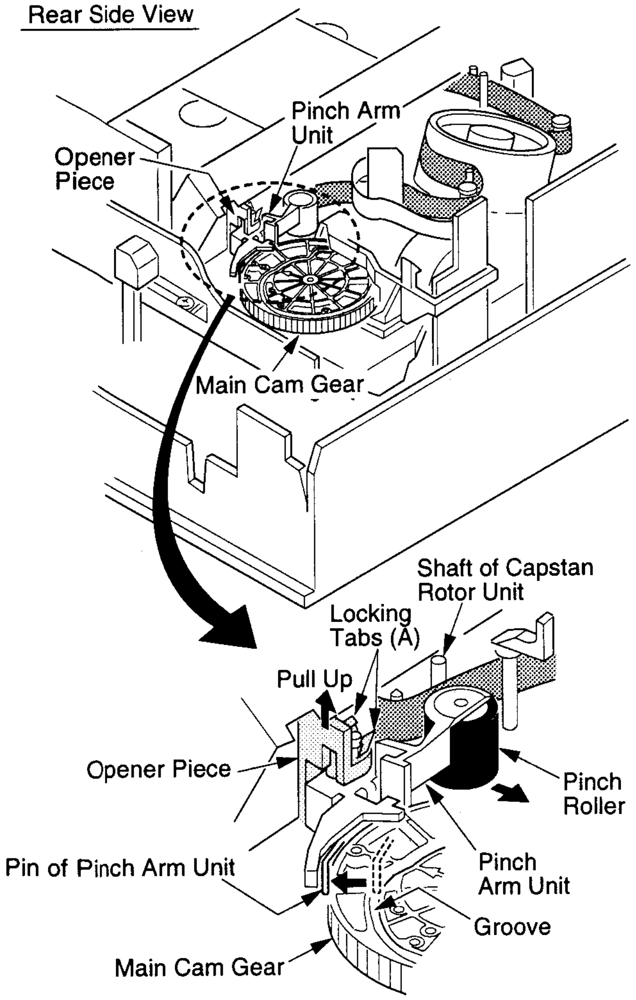

Rear Side View
Pinch Arm Unit
Opener Piece
Main Cam Gear
Shaft of Capstan Rotor Unit
Locking Tabs (A)
Pull Up
Opener Piece
Pinch Roller
Pin of Pinch Arm Unit
Pinch Arm Unit
Groove
Main Cam Gear

Fig. 5-2

3. Remove the tape from the tape path.
4. Rewind the tape into the cassette by rotating the Center Clutch Unit counterclockwise.
5. Unhook Spring (A) of the Drive Rack Unit.
6. Remove Screw (A).
7. Lift the Drive Rack Unit up so that the slot clears the guide tab. While pulling the Drive Rack Unit out far enough so that it clears the Drive Rack Unit.
8. Slide the Drive Rack Unit as indicated by the arrow to remove the cassette tape from the Cassette Up Ass'y.
9. Check the cause of mechanical trouble.
   After fixing mechanical trouble, adjust Mechanism position in EJECT Position.

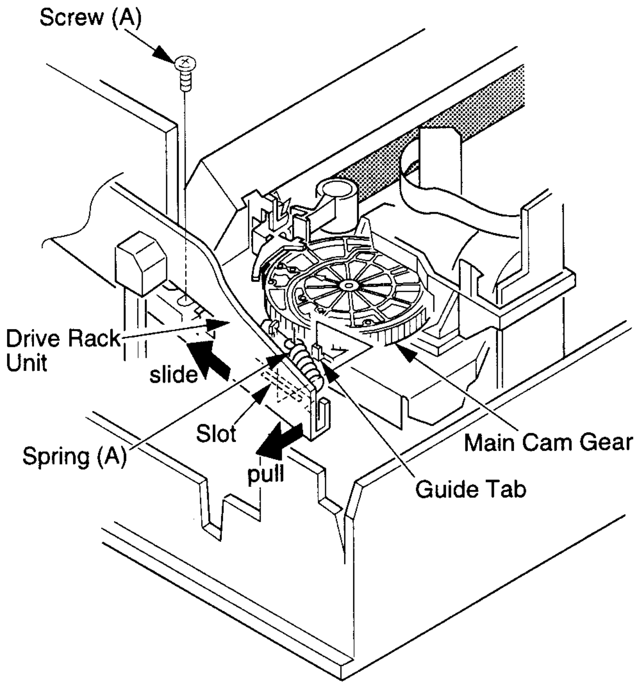

Screw (A)
Drive Rack Unit
slide
Slot
Spring (A)
pull
Main Cam Gear
Guide Tab

Fig. 5-3

Method -2:

1. Rotate Main Cam Gear clockwise with needlenose pliers, etc. so that the Pinch Roller is separated from the shaft of the Capstan Rotor Unit.
2. Perform Step 3 through Step 9 of Method -1.

Method -3:

1. Perform Step 3 through Step 9 of Method -1.

Electrical Method

Electrical method can only be performed when the mechanism is moved by rotating the Main Cam Gear.

CAUTION:

If loading dose not start in approx. 2 seconds after DC Power Supply is applied, DO NOT continue to apply DC Power Supply. Instead, perform "Manual Method."

Method -1:

1. Remove the solder as shown and apply +10.0 VDC Power Supply (DC + to Portion "a," DC - to Portion "c").
2. When the Loading Posts reach the fully unloaded position, remove the Power Supply.

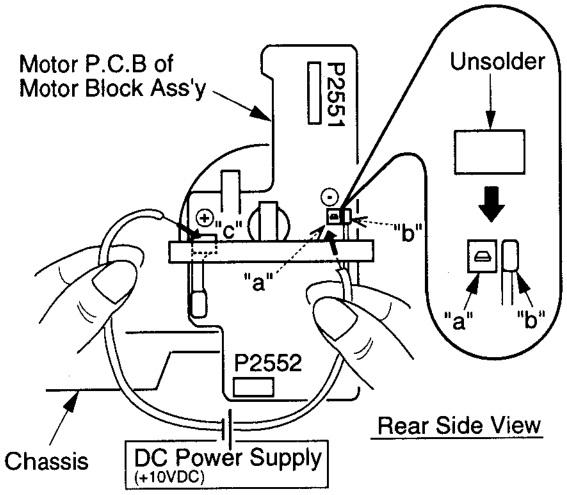


Fig. 6-1

Note:

Be careful not to let the DC Power Supply Unit GND contact the chassis GND. This may damage the Loading Motor Drive IC (IC 2501).
Be sure to apply DC + to Portion "a" of Motor P.C.B.
If DC + is applied to Portion "b", the Loading Motor Drive IC (IC2501) may be damaged.

4. Rewind the tape into the cassette by turning the Center Clutch Unit counterclockwise.
5. Eject the cassette by applying +10.0VDC Power Supply again.
6. After completing the removal procedure, solder Portion "a" and Portion "b."

Method -2:

1. Locate the Jumper (J6004) on the System Control Section of the Main C.B.A. and cut it near the center.

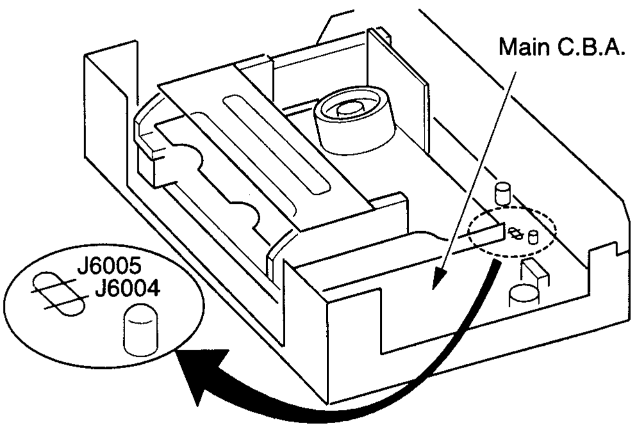


Fig. 6-2

2. Apply +10.0VDC Power Supply to the jumpers. When the Loading Posts reach the fully unloaded position, remove the Power Supply.

Note:

Be careful not to let the DC Power Supply Unit GND contact the chassis GND. This may damage the Loading Motor Drive IC (IC 2501).
Be sure to apply DC + to Portion "a" of J6004.
If DC + is applied to Portion "b" of J6004, the Loading Motor Drive IC (IC2501) may be damaged.

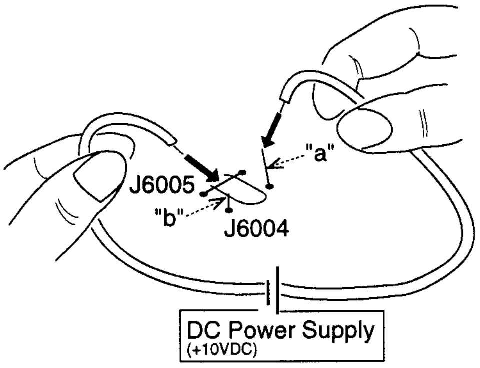


Fig. 6-3

4. Rewind the tape into the cassette by turning the Center Clutch Unit counterclockwise.
5. Eject the cassette by applying +10.0VDC Power Supply again.
6. After completing the removal procedure, resolder Jumper (J6004).

Cylinder Rotation in STOP mode

The cylinder will continue to rotate for approximately 5 minutes after the STOP button is pressed in Play mode etc. Eject the tape in order to stop the cylinder.

Black Screws on the Chassis

Black Screws are used on the Mechanism Chassis to identify screws that require adjustment.

Variable Voltage Isolation Transformer

An Isolation Transformer should always be used during the servicing of VCR whose chassis is not isolated from the AC power line. Use a transformer of adequate power rating as this protects the technician from accidents resulting in personal injury from electrical shocks. It will also protect VCR from being damaged by accidental shorting that may occur during servicing.
Also, when troubleshooting the above type of Power Supply Circuit, a variable isolation transformer is required in order to increase the input voltage slowly.

Special Note

All integrated circuits and many other semiconductor devices are electrostatically sensitive and therefore require the special handling techniques described under the "ELECTROSTATICALLY SENSITIVE (ES) DEVICES" section of this service manual.

Replacement Procedure for Leadless (Chip) Components

The following procedures are recommended for the replacement of the leadless components used in this unit.

1. Preparation for replacement
   a. Soldering Iron
      Use a pencil-type soldering iron that uses less than 30 watts.
   b. Solder
      Eutectic Solder (Tin 63%, Lead 37%) is recommended.
   c. Soldering time
      Do not apply heat for more than 4 seconds.
   d. Preheating
      Leadless capacitor must be preheated before installation. – (266°F ~ 302°F)
      (130°C ~150°C) for about two minutes.

   Note:
   a. Leadless components must not be reused after removal.
   b. Excessive mechanical stress and rubbing of the component electrode must be avoided.

2. Removing the leadless component
   Grasp the leadless component body with tweezers and alternately apply heat to both electrodes. When the solder on both electrodes is melted, remove the leadless component with a twisting motion.

   Note:
   a. Do not attempt to lift the component off the board until the component is completely disconnected from the board by a twisting action.
   b. Be careful not to break the copper foil on the printed circuit board.

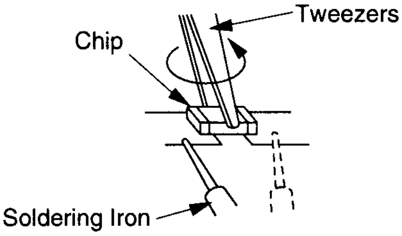


Fig. 7-1

3. Installing the leadless component
   a. Presolder the contact points on the circuit board.

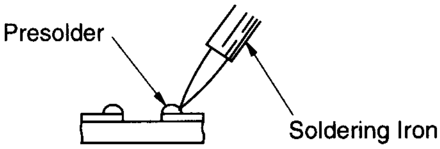


Fig. 7-2

   b. Press the part downward with tweezers and solder both electrodes as shown below.

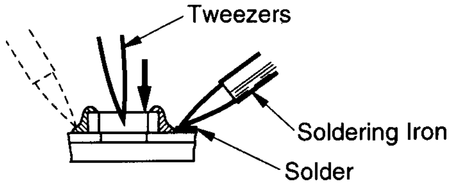


Fig. 7-3

Note:
Do not glue the replacement leadless component to the circuit board.

Model No. Identification Mark

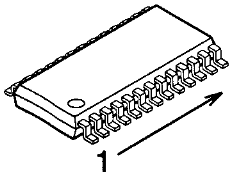
Use Marks shown in the chart below to distinguish the different models included in this Service Manual.

MODEL	MARK
VHQ720	A
PV-7400	B
PV-7401	C
PV-7401-K	D
VHQ740	E
PV-7450	F
PV-7451	G
VHQ760	H

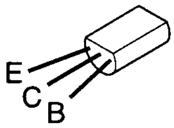
Note:
Refer to Item 5 of Schematic Diagrams and Circuit Board Layout Notes, for mark "Z."

IC, TRANSISTOR AND CHIP PART INFORMATION

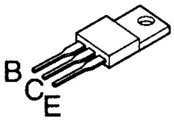
MAIN C.B.A.



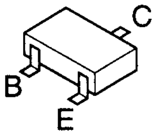
MN3885S,
LC74723M9629



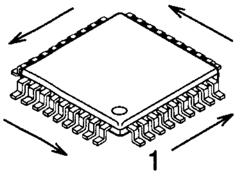
2SD2159



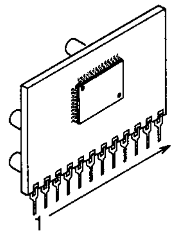
2SC5130LF608,
2SC4533LP.KT,
2SD2375



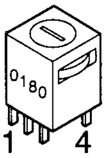
2SD601, 2SD601A,
2SB709, 2SB709A



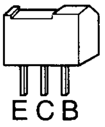
AN3475FBP, AN3962FB-V,
MN675048A5B2
MN675048A5A3
T47C216FF917



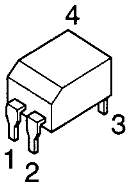
VCRS0213



T4101,
EIQ7QF018Q

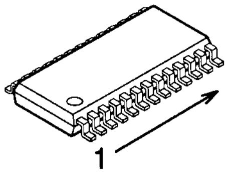


2SD2259,
2SD1991A



ON3131-S.KT,
ON3131-R.KT,
PS2501-1-X

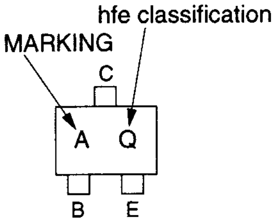
HEAD AMP C.B.A. or
HI-FI AUDIO/VIDEO HEAD AMP C.B.A.



AN3809K, AN3361SB
AN3328S, AN3371SB

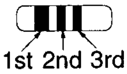
HOW TO READ THE IDENTIFICATION MARK OF CHIP COMPONENTS.

MARKING	PART NO.	MARKING	PART NO.
A	2SB709	Y	2SD601
B	2SB709A	Z	2SD601A



2SB709

HOW TO READ THE VALUES OF THE CYLINDRICAL TYPE CHIP COMPONENTS.



The widest color band must be read first for value.

(a) RESISTOR

There are two types (ERD10LLJ... and ERD10TLJ...) of chip parts.

1) ERD10LLJ : Refer to above type.
2) ERD10TLJ : The narrow color band must be read first for value.

If this part is included in the parts list, be sure that the color band is read properly when servicing.

(b) CAPACITOR

Because of the width of the color bands, the reading direction cannot be specified. However, the color band can be read on either side. Be sure to confirm the value using the schematic diagram.

CAUTION:

Once chip parts are removed, they must not be reused. Always use a new part when installing a chip part.

DISASSEMBLY/ASSEMBLY PROCEDURES

DISASSEMBLY/ASSEMBLY PROCEDURES OF CABINET PARTS

Disassembly Flowchart

Perform all disassembly procedures in the order described in the "Disassembly Flowchart" shown below. When reassembling, use the reverse procedure.

CAUTION:
Disconnect AC plug before disassembly.

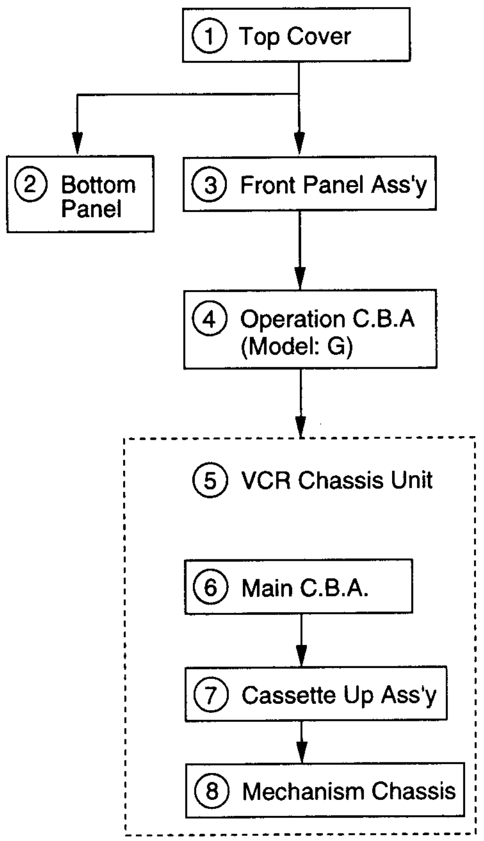

① Top Cover
② Bottom Panel
③ Front Panel Ass'y
④ Operation C.B.A (Model: G)
⑤ VCR Chassis Unit
⑥ Main C.B.A.
⑦ Cassette Up Ass'y
⑧ Mechanism Chassis

Fig. D1

Top Cover

Disassembly Procedure

1. Remove 2 Screws (A) and 2 Screws (B).
2. Lift up on the rear portion of the Top Cover and remove.

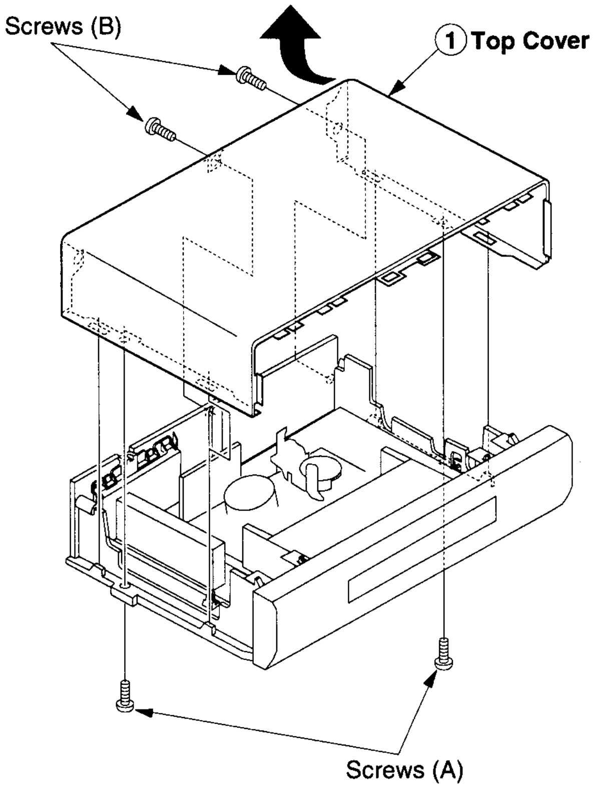

Screws (B)
① Top Cover
Screws (A)

Fig. D2

Bottom Panel

Disassembly Procedure

1. Remove 3 Screws with Washers (A), (B), and Screw (C).
2. While pushing 2 Locking Tabs (A) to release, slide the Bottom Panel and remove.

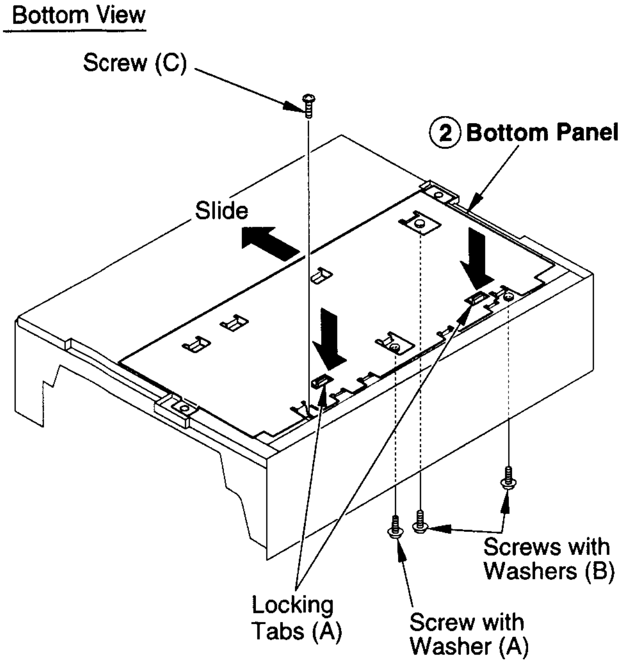

Bottom View
Screw (C)
② Bottom Panel
Slide
Screws with Washers (B)
Locking Tabs (A)
Screw with Washer (A)

Fig. D3

Front Panel Ass'y

Disassembly Procedure

1. Release 2 Locking Tabs (B) on the top left.
2. Release 2 Locking Tabs (C) on the top right.
3. Release 3 Locking Tabs (D) on the bottom side. Then, remove the Front Panel Ass'y.

Note:
Work carefully so as not to break the Tabs.

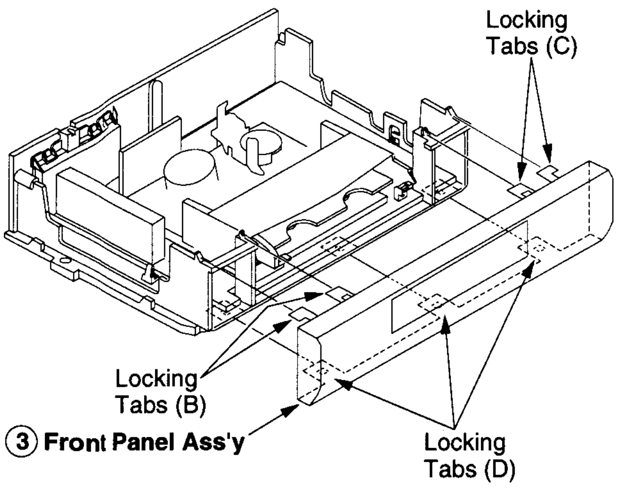

Locking Tabs (C)
Locking Tabs (B)
③ Front Panel Ass'y
Locking Tabs (D)

Fig. D4-1

Reassembly Notes

Installation of Front Panel Ass'y

CAUTION:

1) When installing the Front Panel Ass'y, swing the Cassette Door-Lid all the way open until the Cassette Door tab clears the Opener Lever.
2) Make sure that all locking tabs are aligned properly. Then, press the Front Panel straight in.

   If the Front Panel Ass'y is pressed in at an angle, operation buttons on the Main C.B.A. may be damaged or caused to be fixed in the **ON** position.

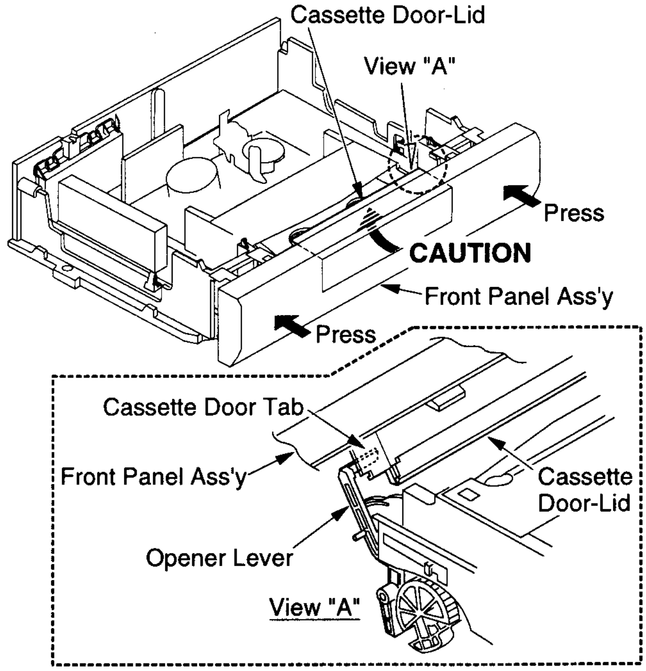

Cassette Door-Lid
View "A"
Press
CAUTION
Front Panel Ass'y
Press
Cassette Door Tab
Front Panel Ass'y
Cassette Door-Lid
Opener Lever
View "A"

Fig. D4-2

Operation C.B.A. (Model: G)

Disassembly Procedure

1. Release 2 Locking Tabs (H).
2. Disconnect Connector P6301 on the Operation C.B.A.

Note:
Work carefully so as not to break the Tabs.

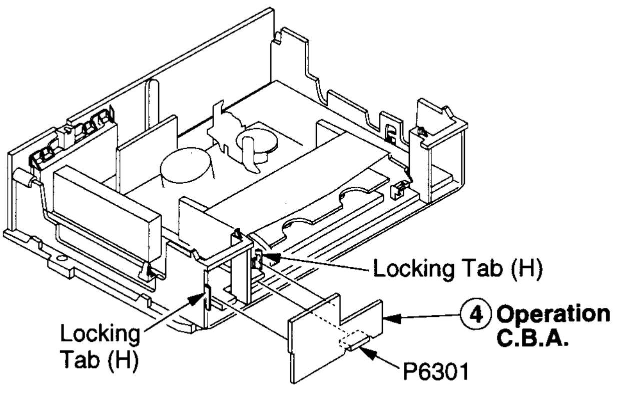

Locking Tab (H)
④ Operation C.B.A.
Locking Tab (H)
P6301

Fig. D5

VCR Chassis Unit

Disassembly Procedure

1. Slide the Holder Unit (refer to "Method for Manual Loading/ Unloading of Mechanism" in Service Notes) to remove 2 Screws (D).
2. Remove Screws (E), (F), (G), (H), and (I).

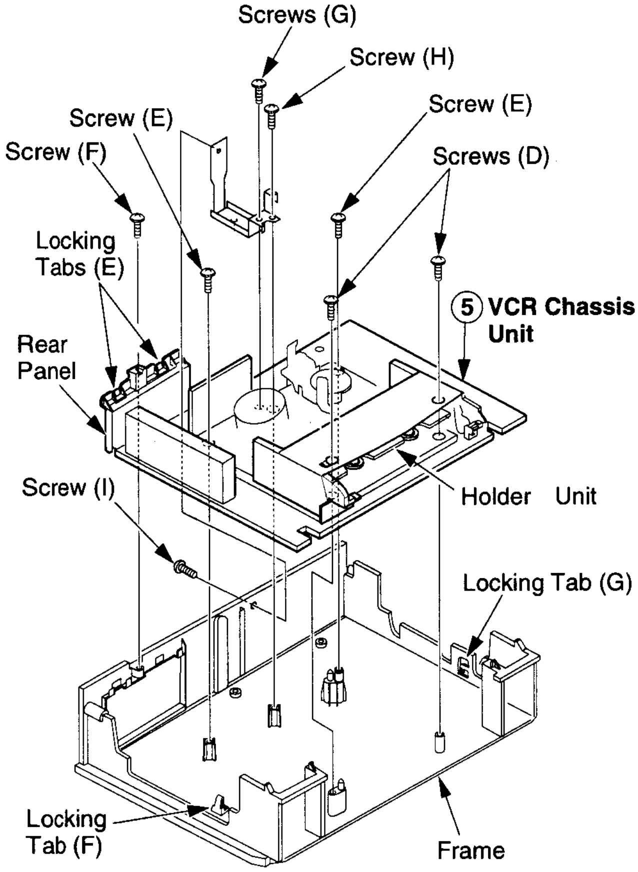

Screws (G)
Screw (H)
Screw (E)
Screw (F)
Screw (E)
Screws (D)
Locking Tabs (E)
⑤ VCR Chassis Unit
Rear Panel
Screw (I)
Holder Unit
Locking Tab (G)
Locking Tab (F)
Frame

Fig. D6-1

3. Push 2 Locking Tabs (E) inward until clear while lifting the Rear Panel.
4. Push Locking Tab (F) outward while gently lifting the left side of the Main C.B.A. (Portion "A").
5. While pushing Locking Tab (G) outward, lift the right side of the Main C.B.A. until even with Portion "A". Then, lift the VCR Chassis Unit out of the Frame.

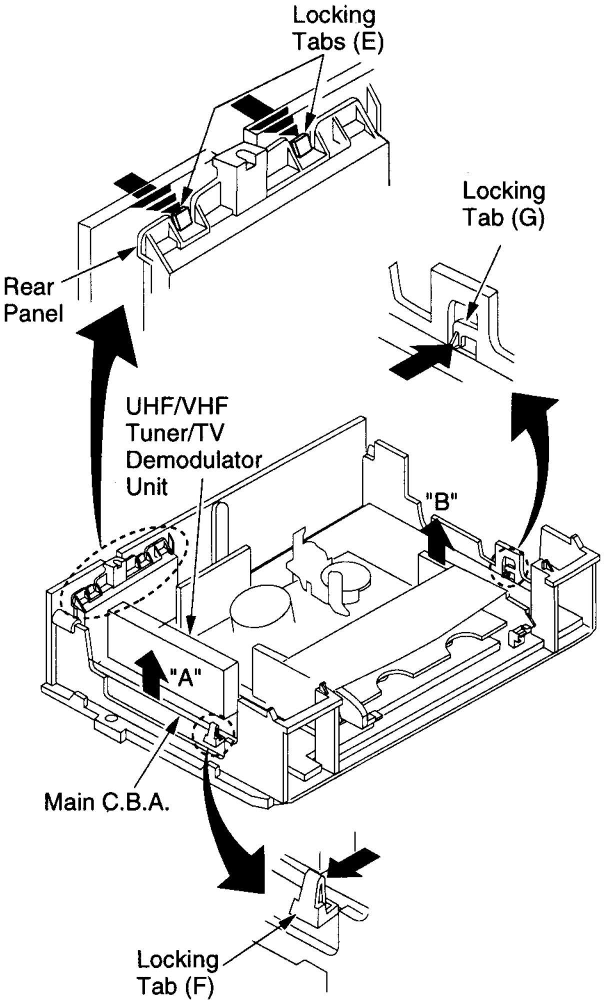

Locking Tabs (E)
Locking Tab (G)
Rear Panel
UHF/VHF Tuner/TV Demodulator Unit
"B"
"A"
Main C.B.A.
Locking Tab (F)

Fig. D6-2

Note:
1. DO NOT pull upward on the UHF/VHF Tuner/TV Demodulator Unit because you may crack the Main C.B.A.
2. Work carefully so as not to break tabs.

Main C.B.A.

Disassembly Procedure

1. Disconnect 4 Connectors of P2531, P2552, P3501 and P4001.
2. Carefully lift the Mechanism Chassis Unit straight out from the Main C.B.A.

Note:
Work carefully so as not to break Sensor LED, when lifting the Mechanism Chassis Unit.

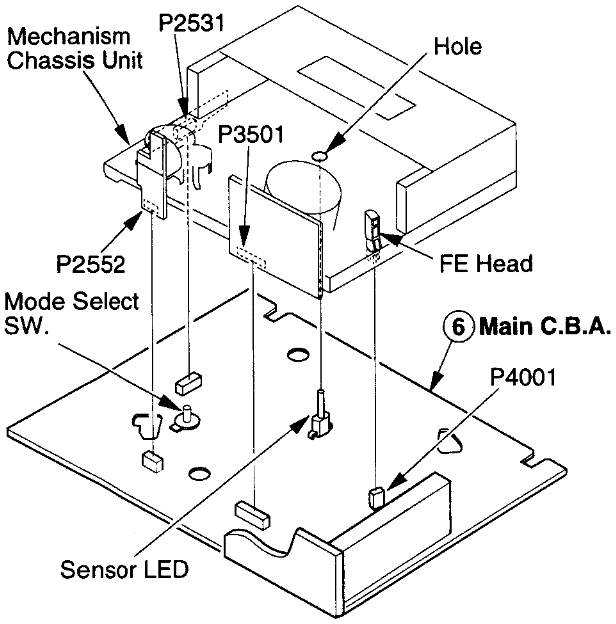

Mechanism Chassis Unit
P2531
Hole
P3501
P2552
FE Head
Mode Select SW.
⑥ Main C.B.A.
P4001
Sensor LED

Fig. D7-1

Reassembly Notes

1. Make sure that the Mode Select SW. on the Main C.B.A. is in EJECT position before installing the Mechanism Chassis Unit onto the Main C.B.A. If not, rotate the Mode Select SW. until the alignment projection is in the EJECT Position.

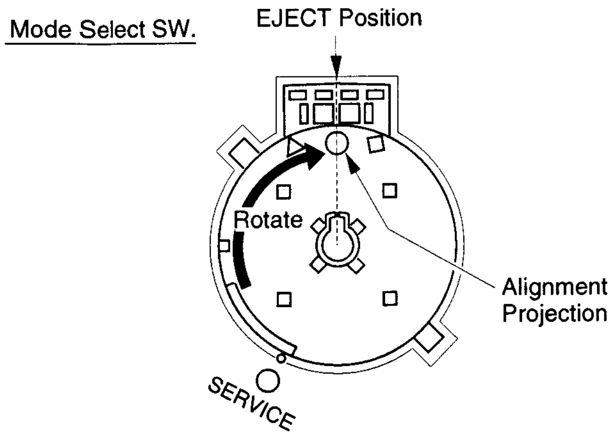

Mode Select SW.
EJECT Position
Rotate
Alignment Projection
SERVICE

Fig. D7-2

2. Be sure to install the Mechanism Chassis Unit straight onto the Main C.B.A. so that the Sensor LED clears the hole in the Mechanism Chassis Unit.
3. Be sure that 4 Connectors (P2531, P2552, P3501, and P4001) are aligned and seated securely.

Cassette Up Assembly

Disassembly Procedure

1. Slide Holder Unit (refer to "Method for Manual Loading/ Unloading of Mechanism" in Service Notes) to remove 2 Screws (J).
2. Remove Screw (K).
3. Unhook Spring (A).
4. Slide the Cassette Up Ass'y towards the front to release Tab (B). Then, lift it up and remove.

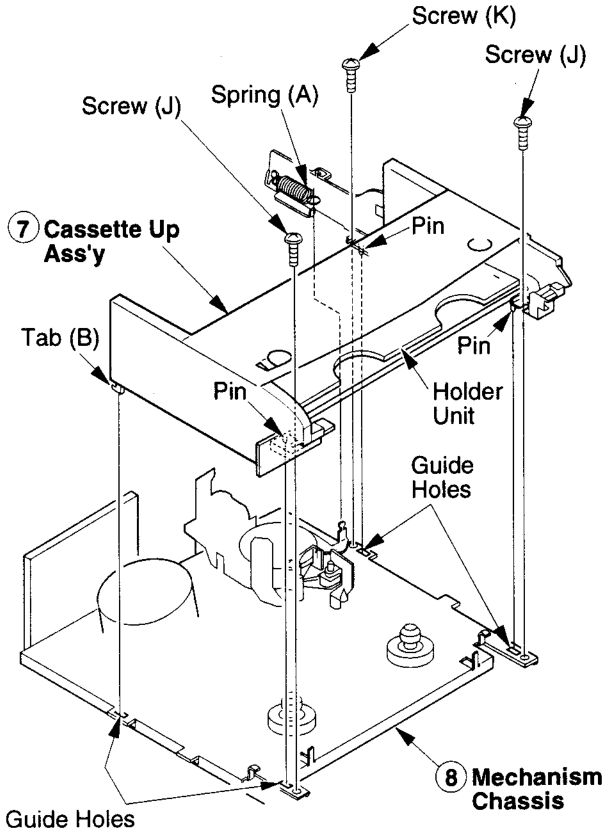

Screw (K)
Screw (J)
Screw (J)
Spring (A)
⑦ Cassette Up Ass'y
Pin
Tab (B)
Pin
Pin
Holder Unit
Guide Holes
⑧ Mechanism Chassis
Guide Holes

Fig. D8

Reassembly Notes

Installation of Cassette Up Ass'y

1) Confirm that the 3 pins and Tab (B) under the Cassette Up Ass'y are in each of the 4 Guide Holes on the Mechanism Chassis when installing the Cassette Up Ass'y. Then, slide the Cassette Up Ass'y towards the back.
2) Tighten 2 Screws (J) and Screw (K).
Be careful not to tighten them too much, or the Cassette Up Ass'y may be bent outward.

DISASSEMBLY/ASSEMBLY PROCEDURES OF MECHANISM

Disassembly Method

This chart indicates Step/Location No. of Parts to be serviced and prior steps to gain access items to be serviced when disassembling.
When reassembling, perform the step(s) in the reverse order.

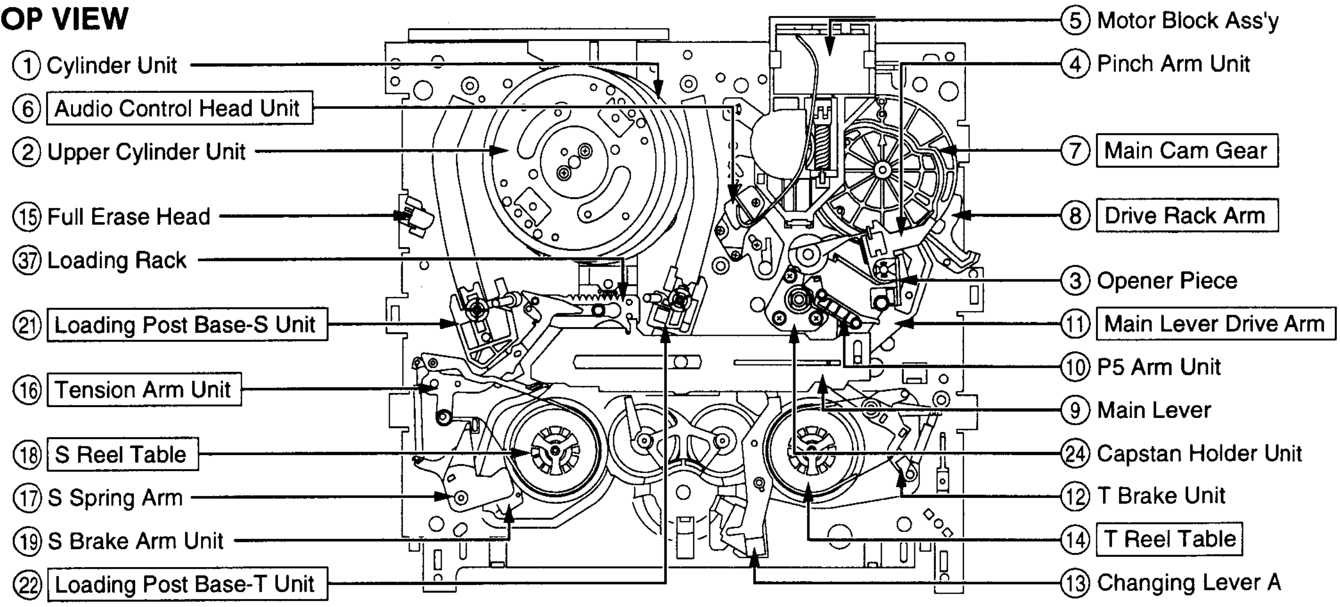
Step /Loc. No.	Part	Prior Step(s)	Step /Loc. No.	Part	Prior Step(s)	Step /Loc. No.	Part	Prior Step(s)	Step /Loc. No.	Part	Prior Step(s)
①	Cylinder Unit	------------	⑪	Main Lever Drive Arm	3, 4, 5, 7, 8, 9	㉑	Loading Post Base-S Unit	16	㉛	S Loading Arm Unit	30
②	Upper Cylinder Unit	------------	⑫	T Brake Unit	9	㉒	Loading Post Base-T Unit	9, 20	㉜	Center Clutch Unit	------------
③	Opener Piece	------------	⑬	Changing Lever A	9	㉓	Capstan Rotor Unit	------------	㉝	Changing Gear Spring	32
④	Pinch Arm Unit	3	⑭	T Reel Table	9, 12, 13	㉔	Capstan Holder Unit	23	㉞	Changing Gear	32, 33
⑤	Motor Block Ass'y	------------	⑮	Full Erase Head	------------	㉕	SS Brake Arm Unit	------------	㉟	Changing Lever-B	32, 33, 34
⑥	Audio Control Head Unit	5	⑯	Tension Arm Unit	------------	㉖	Junction C.B.A.	------------	㊱	Idler Arm Unit	32, 33, 34
⑦	Main Cam Gear	3, 4, 5	⑰	S Spring Arm	------------	㉗	Capstan Stator Unit	23, 25, 26	㊲	Loading Rack	9, 30
⑧	Drive Rack Arm	3, 4, 5, 7	⑱	S Reel Table	16, 17	㉘	Sub Rotor	23, 25, 26, 27	㊳	Grounding Plate Unit	------------
⑨	Main Lever	------------	⑲	S Brake Arm Unit	9, 16, 17, 18	㉙	PCB Holder	23, 25, 26, 27	㊴	FG Head	------------
⑩	P5 Arm Unit	9	⑳	Main Lever Guide	9	㉚	T Loading Arm Unit	------------			

Step/Loc. No.: Order of steps in procedure. Part : Part to be removed or installed. Prior Step(s) : Steps to be completed prior to the current step.

Note: When the mechanical parts surrounded by rectangle are removed or replaced, be sure to perform necessary adjustment or alignment procedures according to the mechanical adjustment procedures section and disassembly/assembly procedures of mechanism section.

Perform all disassembly and alignments procedures in EJECT Position.

TOP VIEW


① Cylinder Unit
⑥ Audio Control Head Unit
② Upper Cylinder Unit
⑮ Full Erase Head
㊲ Loading Rack
㉑ Loading Post Base-S Unit
⑯ Tension Arm Unit
⑱ S Reel Table
⑰ S Spring Arm
⑲ S Brake Arm Unit
㉒ Loading Post Base-T Unit
⑤ Motor Block Ass'y
④ Pinch Arm Unit
⑦ Main Cam Gear
⑧ Drive Rack Arm
③ Opener Piece
⑪ Main Lever Drive Arm
⑩ P5 Arm Unit
⑨ Main Lever
㉔ Capstan Holder Unit
⑫ T Brake Unit
⑭ T Reel Table
⑬ Changing Lever A

BOTTOM VIEW

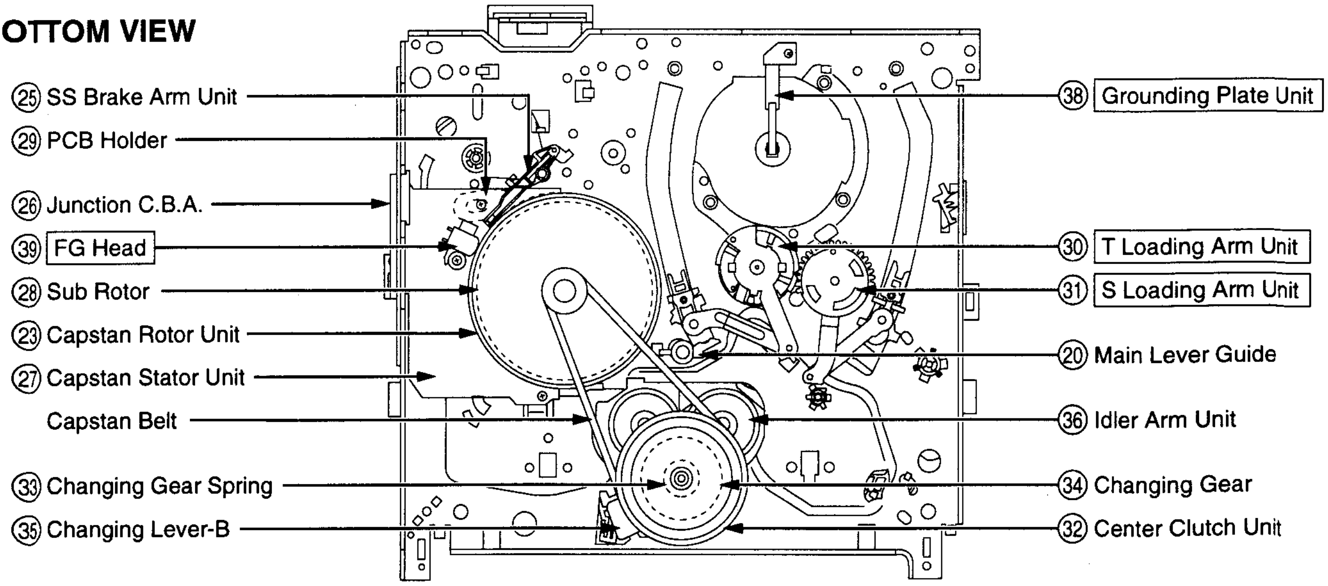

㉕ SS Brake Arm Unit
㉙ PCB Holder
㉖ Junction C.B.A.
㊴ FG Head
㉘ Sub Rotor
㉓ Capstan Rotor Unit
㉗ Capstan Stator Unit
Capstan Belt
㉝ Changing Gear Spring
㉟ Changing Lever-B
㊳ Grounding Plate Unit
㉚ T Loading Arm Unit
㉛ S Loading Arm Unit
⑳ Main Lever Guide
㊱ Idler Arm Unit
㉞ Changing Gear
㉜ Center Clutch Unit

Fig. J1

Cylinder Unit

Disassembly Procedure

1. Remove 3 Screws (A) and 2 Screws with Washers (A). Then, lift the Cylinder Unit and the Head Amp C.B.A. out from the mechanism.
2. Unsolder P3502 and P3503. Then, remove the Head Amp C.B.A.

Note:

Use extreme care when removing or replacing the Cylinder Unit. Do not touch the Video Heads during servicing.

CAUTION:

When removing the Cylinder Unit, avoid touching IC2601 on the Head Amp C.B.A. because it is **HOT** during operation.

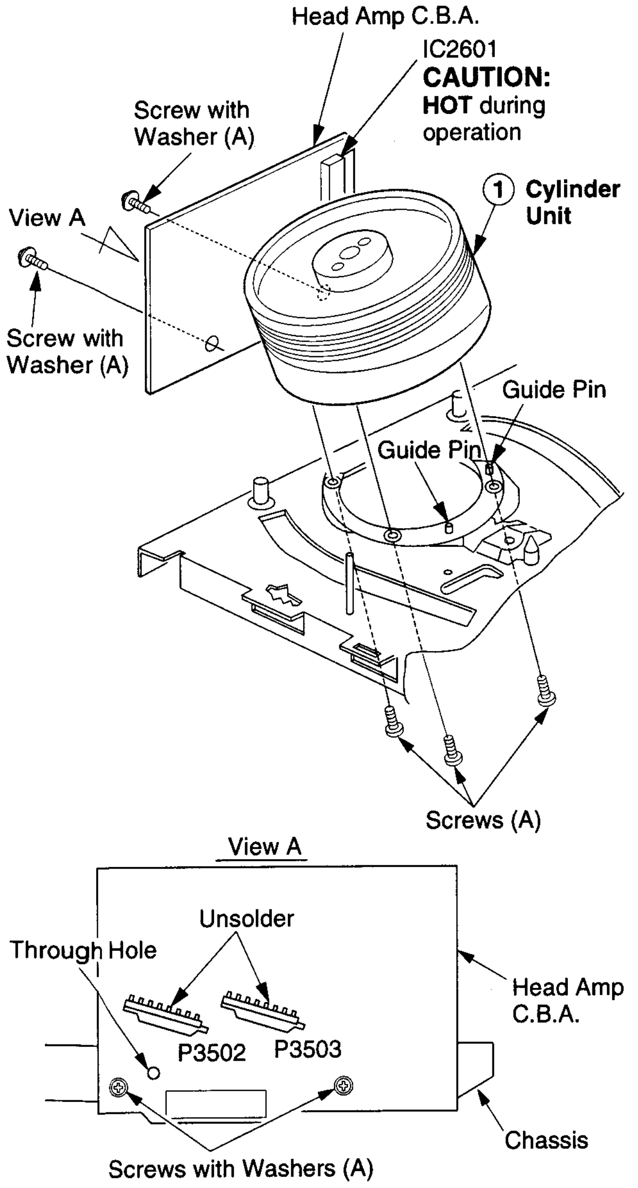

Head Amp C.B.A.
IC2601
CAUTION:
HOT during operation
Screw with Washer (A)
View A
① Cylinder Unit
Screw with Washer (A)
Guide Pin
Guide Pin
Screws (A)
View A
Unsolder
Through Hole
Head Amp C.B.A.
P3502
P3503
Chassis
Screws with Washers (A)

Fig. J2-1

Reassembly Notes

1. Use extreme care when removing or replacing the Cylinder Unit. Do not touch the Video Heads during servicing.
2. **Installation of Cylinder Unit**
   1) Install the Cylinder Unit so that the 2 holes on the lower surface of the Cylinder Unit fit over the 2 Guide Pins on the Cylinder Base and loosely secure it with 3 Screws (A).
   2) Install the Head Amp C.B.A. so that the hole on the Head Amp C.B.A. lines up with the hole on the chassis and secure it with 2 Screws with Washers (A).
   3) Position the Cylinder Unit so that foil patterns of connectors (P3502 and P3503) and Head Amp C.B.A. are aligned, and tighten 3 Screws (A).
   4) Solder connectors (P3502 and P3503).
3. **Adjustment of Grounding Plate Unit**
   1) After installing, make sure that the Grounding Plate Unit, on the bottom side of mechanism chassis, is positioned on the right side of the Cylinder shaft so that the center line of the plate is just less than 1.0 mm measured from the center of the Cylinder shaft.
      If required, adjust the plate position by loosening Black Screw (A).
      Never install the Grounding Plate Unit on the left side of the Cylinder shaft.
      Incorrect positioning will cause cylinder buzz.

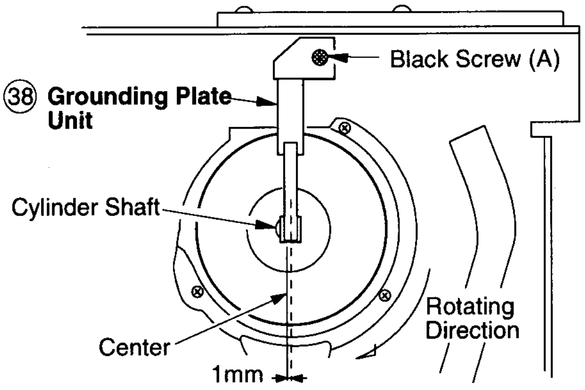

Black Screw (A)
㊳ Grounding Plate Unit
Cylinder Shaft
Rotating Direction
Center
1mm

Fig. J2-2

   2) After installing, perform the "Tape Interchangeability Adjustment/Confirmation Procedures."

Upper Cylinder Unit

Disassembly Procedure

1. Remove 2 Screws with Washers (B).
2. Carefully lift the Upper Cylinder Unit from the shaft.

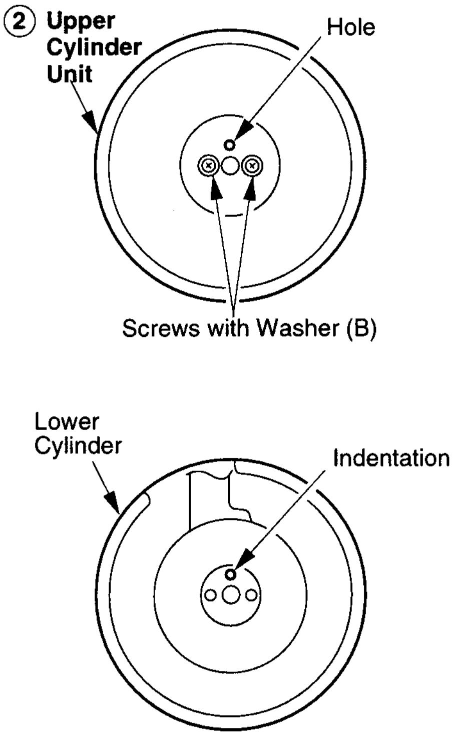

② Upper Cylinder Unit
Hole
Screws with Washer (B)
Lower Cylinder
Indentation

Fig. J3

Note:
Use extreme care when removing or replacing the Upper Cylinder Unit. Do not touch the Video Heads during servicing.

Reassembly Notes

1. Use extreme care when removing or replacing the Cylinder Unit. Do not touch the Video Heads during servicing.
2. **Alignment of Upper Cylinder Unit**
   1) When installing, make sure that the hole on the Upper Cylinder is aligned with the indentation on the Lower Cylinder.
   2) After installing, perform the "Tape Interchangeability Adjustment/Confirmation Procedures."

Opener Piece, Pinch Arm Unit, Motor Block Ass'y, and Audio Control Head Unit

Disassembly Procedure

1. Remove the Opener Piece by pulling it upward while releasing 2 Locking Tabs (A).
2. Pull up on the Pinch Arm Unit.
3. Release 3 Locking Tabs (B) and remove Screw with Washer (C). Then, remove the Motor Block Ass'y and Audio Control Head Unit.

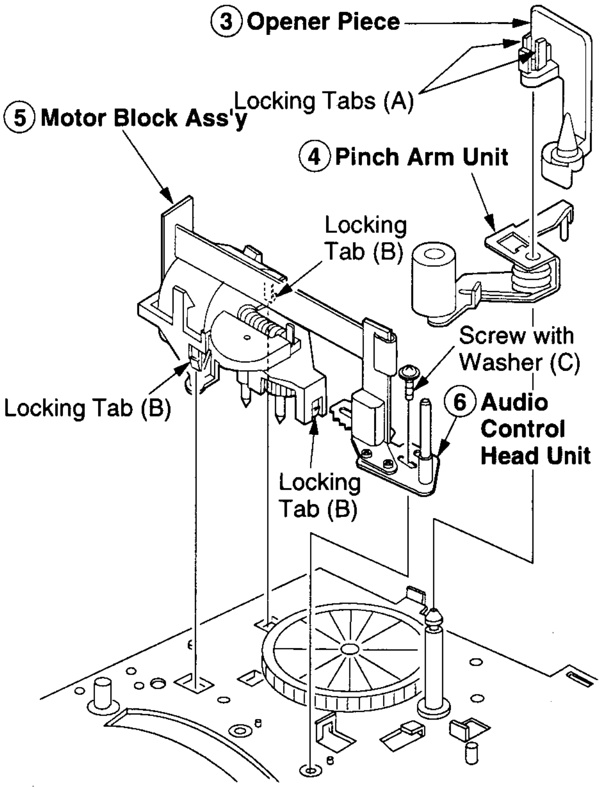

③ Opener Piece
Locking Tabs (A)
⑤ Motor Block Ass'y
④ Pinch Arm Unit
Locking Tab (B)
Screw with Washer (C)
⑥ Audio Control Head Unit
Locking Tab (B)
Locking Tab (B)

Fig. J4

Reassembly Notes

1. **Installation of Audio Control Head Unit**
   1) Install the Audio Control Head Unit before Motor Block Ass'y.
   2) After installing, perform the "Tape Interchangeability Adjustment/Confirmation Procedures."

Main Cam Gear and Drive Rack Arm

Disassembly Procedure

1. Remove the Main Cam Push Nut. (Refer to Note.)
2. Pull up on the Main Cam Gear.
3. Turn the Drive Rack Arm fully counterclockwise as shown.
4. Pull up on the Drive Rack Arm.

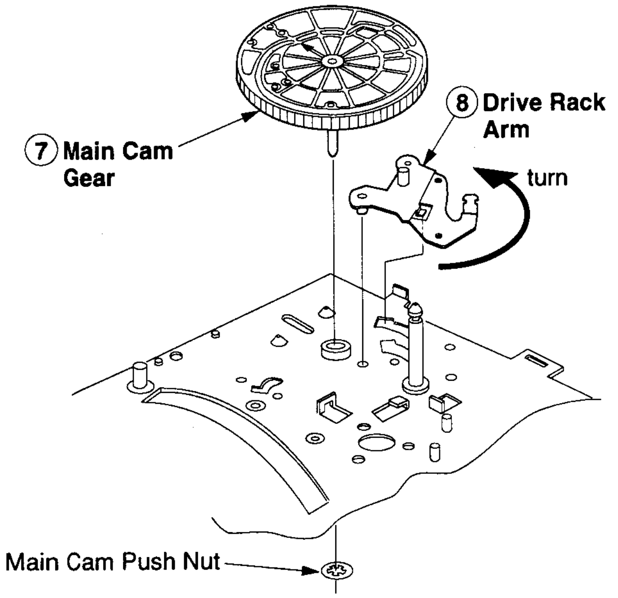

⑦ Main Cam Gear
⑧ Drive Rack Arm
turn
Main Cam Push Nut

Fig. J5-1

Note:
When removing the Main Cam Push Nut, use a screwdriver etc.

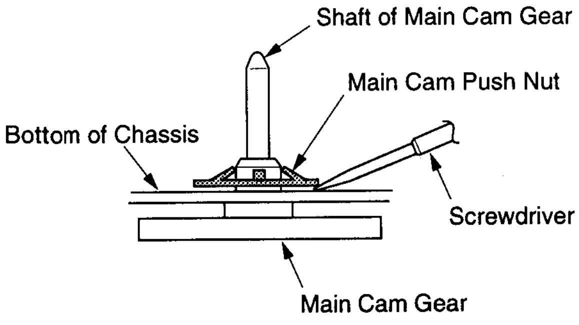

Shaft of Main Cam Gear
Main Cam Push Nut
Bottom of Chassis
Screwdriver
Main Cam Gear

Fig. J5-2

Reassembly Notes

1. **Alignment of Main Cam Gear and Drive Rack Arm**
   1) Install the Drive Rack Arm so that the hole (A) is aligned with the hole on chassis as shown (Through hole (A)).
   2) Install the Main Cam Gear so that the 2 holes (B) marked "E" are aligned with the hole on chassis as shown (Through hole (B)). ("E" indicates the EJECT position.)

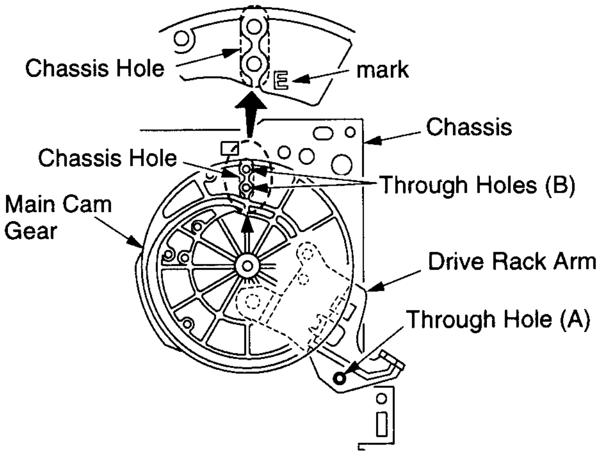

Chassis Hole
mark
E
Chassis
Chassis Hole
Through Holes (B)
Main Cam Gear
Drive Rack Arm
Through Hole (A)

Fig. J5-3

2. **Installation of Main Cam Gear and Main Cam Push Nut**
   1) Position the chassis upside down placing a Support under the Main Cam Gear.
      Install the Main Cam Push Nut with Needlenose Pliers etc. so that it is flush with the chassis.

      There may be some slight scratches on the Shaft of Main Cam Gear, when removing the Main Cam Gear. In case that the Main Cam Gear can be installed securely without tottering, it is fine to use the one. If any tottering, replace a new one.

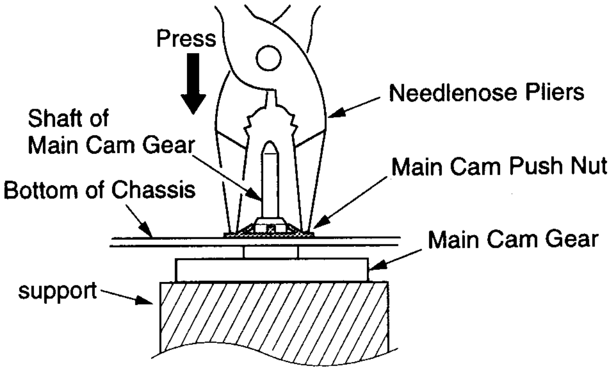

Press
Needlenose Pliers
Shaft of Main Cam Gear
Main Cam Push Nut
Bottom of Chassis
Main Cam Gear
support

Fig. J5-4

3. Main Cam Push Nut is not reusable. If removed, install a new one.

Main Lever

Disassembly Procedure

1. Release 2 Locking Tabs (C) and Locking Tab (D). Then, remove the Main Lever.

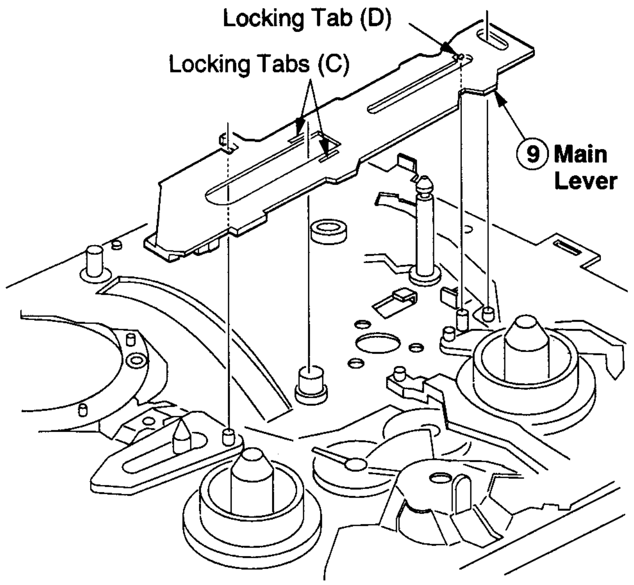

Locking Tab (D)
Locking Tabs (C)
⑨ Main Lever

Fig. J6-1

Reassembly Notes

1. **Confirmation of Main Lever**
   1) Confirm that bosses and shafts are set properly after installation of Main Lever.

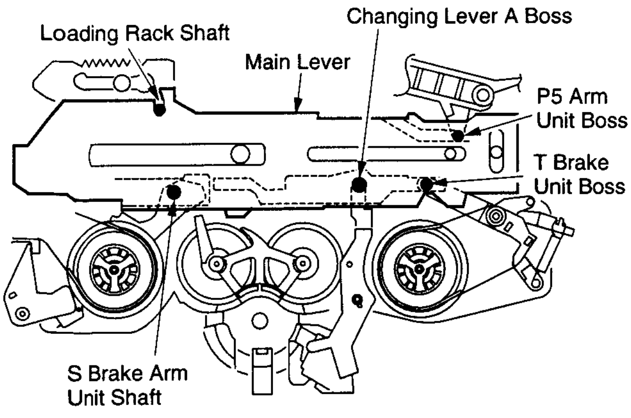

Changing Lever A Boss
Loading Rack Shaft
Main Lever
P5 Arm Unit Boss
T Brake Unit Boss
S Brake Arm Unit Shaft

Fig. J6-2

P5 Arm Unit and Main Lever Drive Arm

Disassembly Procedure

1. Pull up on the P5 Arm Unit.
2. Turn the Main Lever Drive Arm fully counterclockwise as shown.
3. Pull up on the Main Lever Drive Arm.

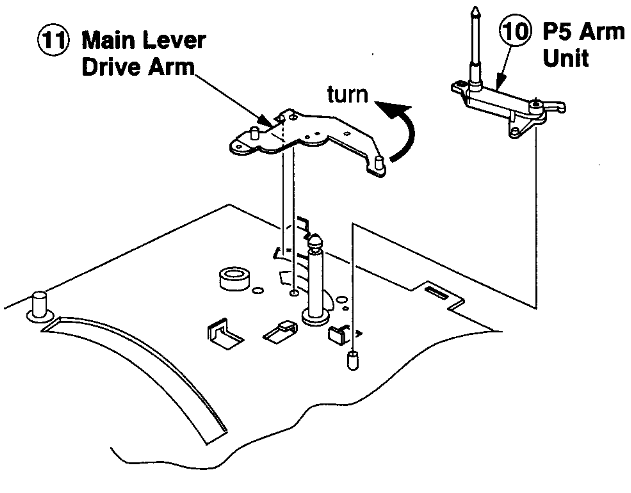

⑪ Main Lever Drive Arm
turn
⑩ P5 Arm Unit

Fig. J7-1

Reassembly Notes

1. **Alignment of Main Lever Drive Arm**
   1) Install the Main Lever Drive Arm so that the hole (C) is aligned with the hole on the Chassis as shown (Through hole (C)).

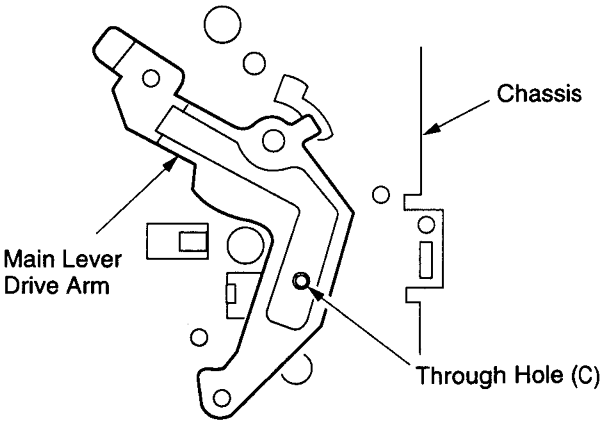

Chassis
Main Lever Drive Arm
Through Hole (C)

Fig. J7-2

T Brake Unit, Changing Lever A, and T Reel Table

Disassembly Procedure

1. Remove the T Brake Unit while releasing Locking Tab (E) located under the chassis.
2. Remove Cut Washer (A). Then, pull up on the Changing Lever A and remove.
3. Pull up on the T Reel Table.

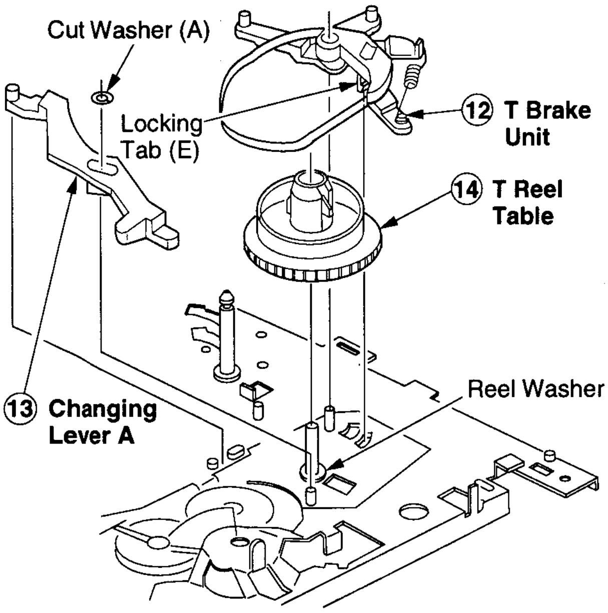

Cut Washer (A)
Locking Tab (E)
⑫ T Brake Unit
⑭ T Reel Table
⑬ Changing Lever A
Reel Washer

Fig. J8-1

Reassembly Notes

1. **How to distinguish between S Reel Table and T Reel Table**

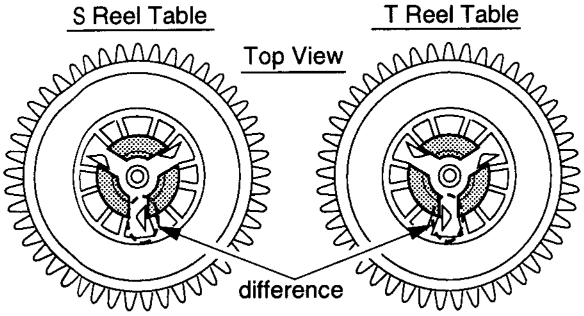

S Reel Table
T Reel Table
Top View
difference

Fig. J8-2

2. **Adjustment of T Reel Table**
   1) After installing, perform the "Reel Table Height Adjustment Procedures."
3. Be careful not to lose the Reel Washer under the T Reel Table.
4. Cut Washer (A) is not reusable. If removed, install a new one.

Full Erase Head, Tension Arm Unit, S Spring Arm, and S Reel Table

Disassembly Procedure

1. Turn the Full Erase Head fully counterclockwise as shown. Then remove it.
2. Unhook Spring (A).
3. Remove the Tension Arm Unit by pulling it up while releasing 2 Locking Tabs (F).
4. Remove the S Spring Arm while releasing Locking Tab (G).
5. Pull up on the S Reel Table.

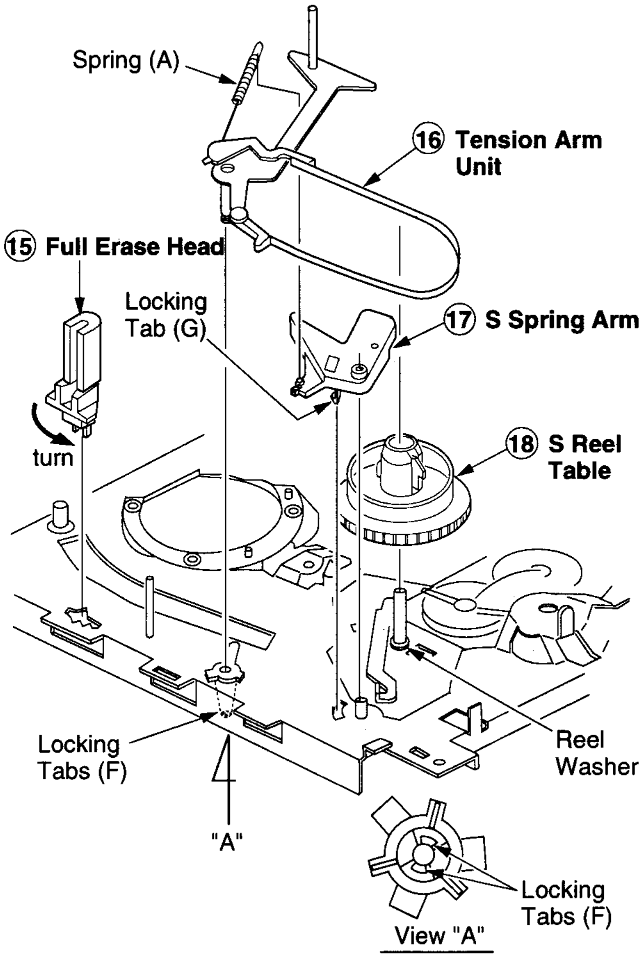

Spring (A)
⑯ Tension Arm Unit
⑮ Full Erase Head
Locking Tab (G)
⑰ S Spring Arm
turn
⑱ S Reel Table
Locking Tabs (F)
"A"
Reel Washer
Locking Tabs (F)
View "A"

Fig. J9

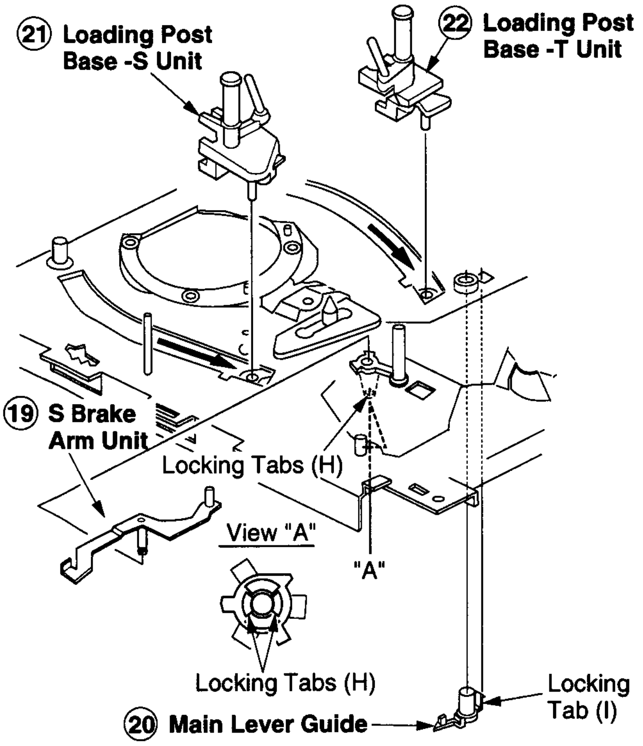
Reassembly Notes

1. **Adjustment of S Reel Table**
   1) After installing, perform the "Reel Table Height Adjustment Procedures".
2. Be careful not to lose the Reel Washer under the S Reel Table.
3. **Adjustment of Tension Arm Unit**
   1) After installing, perform the "Tension Post Adjustment Procedures."

S Brake Arm Unit, Main Lever Guide, Loading Post Base -S, and Loading Post Base -T Unit

Disassembly Procedure

1. Remove the S Brake Arm Unit while releasing 2 Locking Tabs (H).
2. Remove the Main Lever Guide while releasing Locking Tab (I).
3. Slide the Loading Post Base -S and T Units to the end of the guide slots to remove.



㉑ Loading Post Base -S Unit
㉒ Loading Post Base -T Unit
⑲ S Brake Arm Unit
Locking Tabs (H)
View "A"
"A"
Locking Tabs (H)
⑳ Main Lever Guide
Locking Tab (I)

Fig. J10

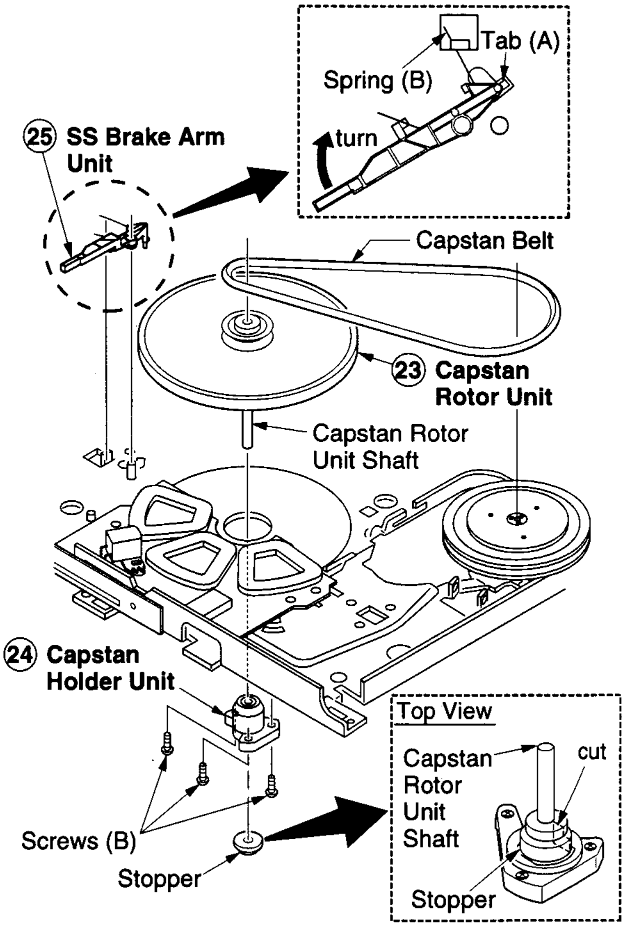
Reassembly Notes

1. **Adjustment of Loading Post Base -S Unit and Loading Post Base -T Unit**
   1) After installing, perform the "P2 and P3 Post Height Adjustment Procedures" and "Tape Interchangeability Adjustment/Confirmation Procedures."

Capstan Rotor Unit, Capstan Holder Unit, and SS Brake Arm Unit

Disassembly Procedure

1. Remove the Capstan Belt.
2. Cut the Stopper with a cutter to remove.
3. Pull up on the Capstan Rotor Unit.
4. Remove 3 Screws (B). Then remove the Capstan Holder Unit.
5. Unhook Spring (B).
6. Turn the SS Brake Arm Unit so that the Tab (A) lines up with the niche. Then, remove the SS Brake Arm Unit.

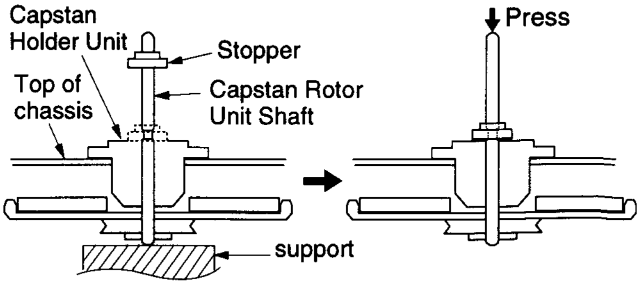


Tab (A)
Spring (B)
turn
㉕ SS Brake Arm Unit
Capstan Belt
㉓ Capstan Rotor Unit
Capstan Rotor Unit Shaft
㉔ Capstan Holder Unit
Screws (B)
Stopper
Top View
Capstan Rotor Unit Shaft
cut
Stopper

Fig. J11-1

Reassembly Notes

1. **Installation of Capstan Rotor Unit**
   1) Insert the Capstan Rotor Unit Shaft to the hole of the Capstan Holder Unit.
   2) Place a support under the Capstan Rotor Unit shaft. Install the Stopper. Be careful not to scratch the shaft or Capstan Holder Unit.
   3) Remove the support. Press the top end of the shaft down so that the Stopper is properly positioned. You should be able to move the shaft up and down slightly when properly positioned.



Capstan Holder Unit
Stopper
Top of chassis
Capstan Rotor Unit Shaft
support
Press

Fig. J11-2

2. **Capstan Rotor Kit**
   Capstan Rotor Unit, Capstan Holder Unit, and Stopper are supplied as a Capstan Rotor Kit only. (Kit No. VXPS0382K) They are not reusable. If removed, install a new one. Because even invisible scratches on the Shaft of Capstan Rotor Unit and the Capstan Holder Unit, made when cutting the Stopper, could cause unstable tape path running.

Junction C.B.A., Capstan Stator Unit, Sub Rotor, and PCB Holder

Disassembly Procedure

1. Remove 2 Screws (C).
2. Unsolder P2532 on the Junction C.B.A. Then, remove the Junction C.B.A.
3. Remove Screw (D) and 2 Screws with Washers (D), (E). Then, remove Capstan Stator Unit, Sub Rotor, and PCB Holder.

CAUTION:

When removing Capstan Stator Unit, avoid touching IC2501 on the Capstan Stator Unit because it is **HOT** during operation.

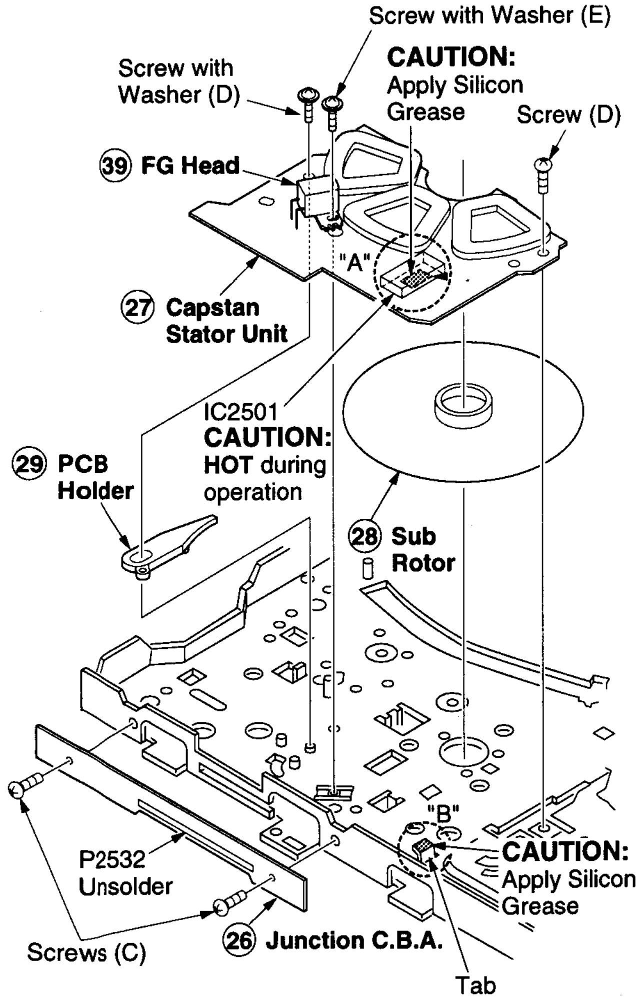

Screw with Washer (E)
Screw with Washer (D)
CAUTION:
Apply Silicon Grease
Screw (D)
㊴ FG Head
"A"
㉗ Capstan Stator Unit
IC2501
CAUTION:
HOT during operation
㉙ PCB Holder
㉘ Sub Rotor
"B"
CAUTION:
Apply Silicon Grease
P2532
Unsolder
Screws (C)
㉖ Junction C.B.A.
Tab

Fig. J12-1

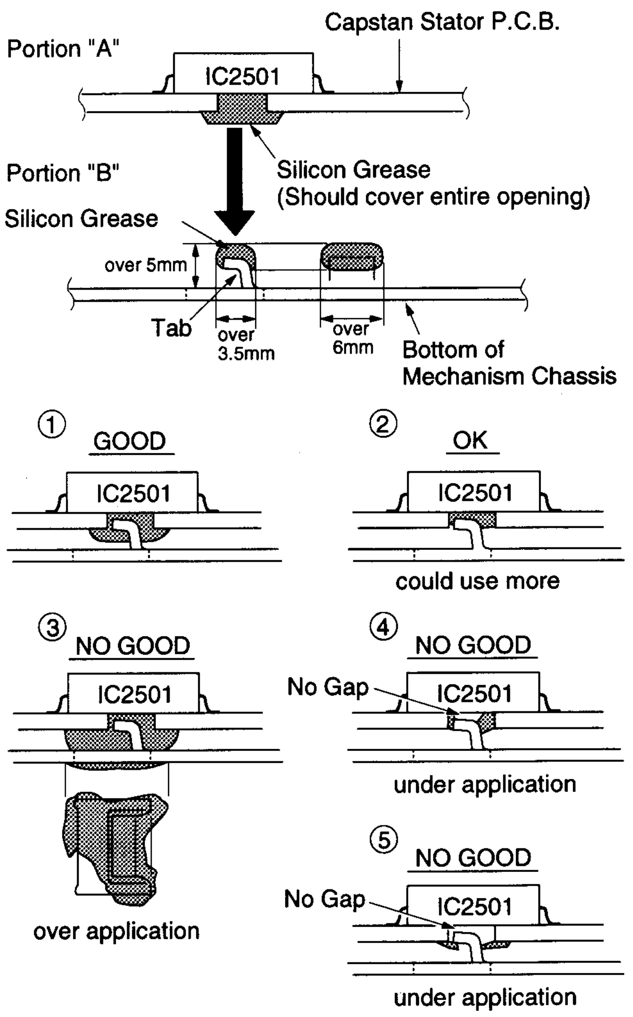
Reassembly Notes

1. **Application of Sillicon Grease**

CAUTION

When installing the Capstan Stator Unit, be sure to apply Silicon Grease (VFK1301) as shown.
Be careful not to touch other parts with greased portion to prevent grease depletion.

Silicon Grease Application


Capstan Stator P.C.B.
Portion "A"
IC2501
Portion "B"
Silicon Grease
(Should cover entire opening)
Silicon Grease
over 5mm
Tab
over 3.5mm
over 6mm
Bottom of Mechanism Chassis
① GOOD
IC2501
② OK
IC2501
could use more
③ NO GOOD
IC2501
over application
④ NO GOOD
No Gap
IC2501
under application
⑤ NO GOOD
No Gap
IC2501
under application

2. **Capstan Stator Kit**
   1) Capstan Stator Unit, Capstan Rotor Unit, Capstan Holder Unit, and Stopper are supplied as a Capstan Stator Kit (Kit No. VEMS0316K).
   Capstan Rotor Unit, Capstan Holder Unit, and Stopper are not reusable. If removed, install a new one.
   Because even invisible scratches on the Shaft of Capstan Rotor Unit and the Capstan Holder Unit, made when cutting the Stopper, could cause unstable tape path running.
3. **Adjustment of FG Head**
   1) After installing, perform the "FG Head gap Adjustment Procedures."

T Loading Arm Unit and S Loading Arm Unit

Disassembly Procedure

1. Remove the T Loading Arm Unit by pulling it up while releasing Locking Tab (J).
2. Pull up on the S Loading Arm Unit.

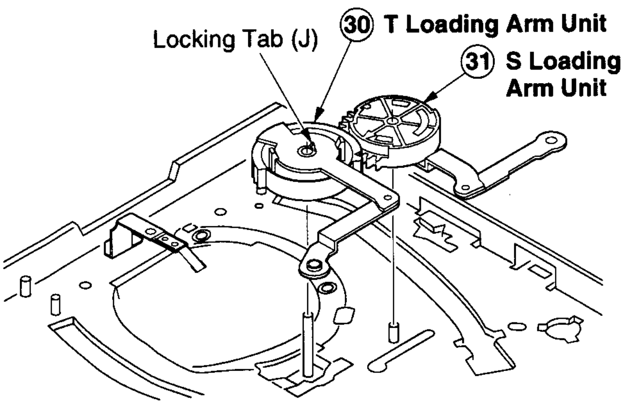

Locking Tab (J)
㉚ T Loading Arm Unit
㉛ S Loading Arm Unit

Fig. J13-1

Reassembly Notes

1. **Alignment of T Loading Arm Unit and S Loading Arm Unit**
   1) Slide the Loading Rack so that the holes on it and the holes on chassis line up properly.
   2) Install the S Loading Arm Unit onto the Chassis.
   3) Install the T Loading Arm Unit so that the triangle-shaped indent is aligned with the arrow on the S Loading Arm Unit as shown. Confirm that each of holes on the T Loading Arm Unit, Chassis, and the Loading Rack are through holes.

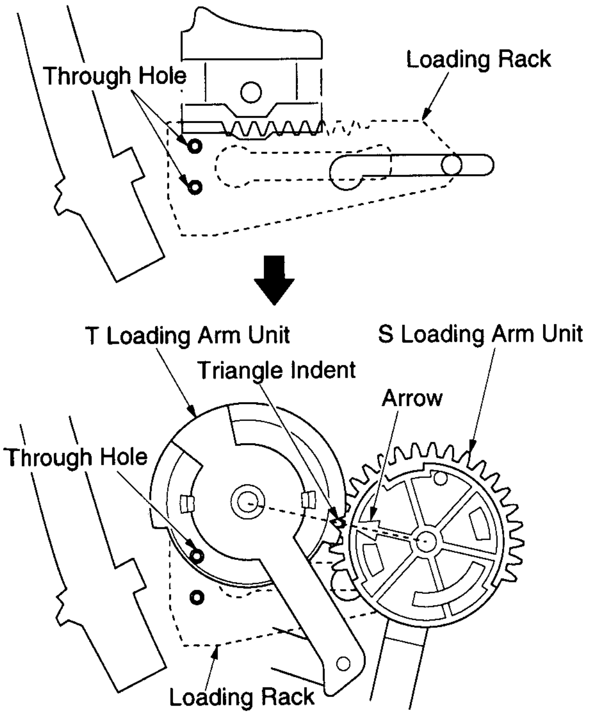

Through Hole
Loading Rack
T Loading Arm Unit
S Loading Arm Unit
Triangle Indent
Arrow
Through Hole
Loading Rack

Fig. J13-2

Center Clutch Unit, Changing Gear Spring, Changing Gear, Changing Lever-B, and Idler Arm Unit

Disassembly Procedure

1. Remove Cut Washer (B). Then remove the Center Clutch Unit, Changing Gear Spring, and Changing Gear.
2. Remove Changing Lever-B while releasing 2 Locking Tabs (K).
3. Pull up on the Idler Arm Unit.

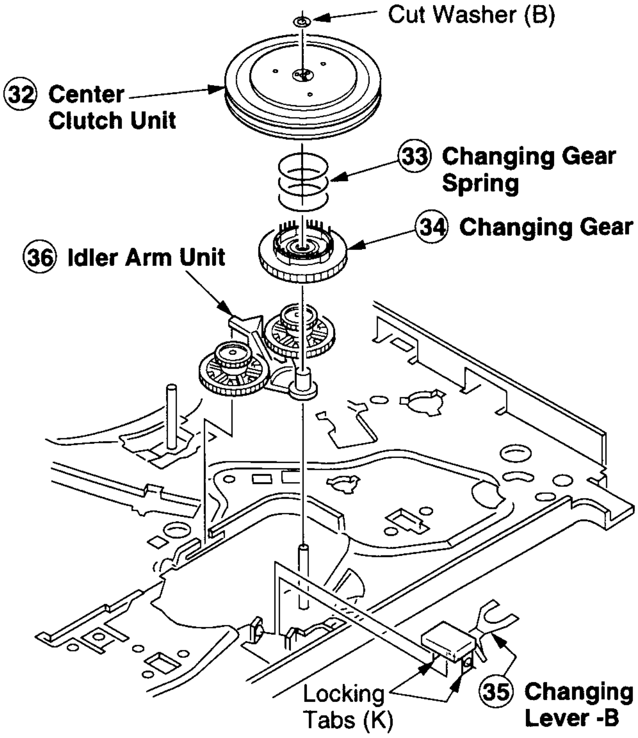

Cut Washer (B)
㉜ Center Clutch Unit
㉝ Changing Gear Spring
㉞ Changing Gear
㊱ Idler Arm Unit
Locking Tabs (K)
㉟ Changing Lever -B

FIg. J14-1

Reassembly Notes

1. **Installation of Center Clutch Unit**
   1) Fit the Center Clutch Unit into the Changing Gear as shown.

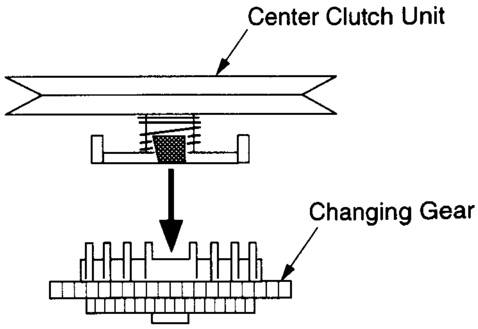

Center Clutch Unit
Changing Gear

Fig. J14-2

2. Cut Washer (B) is not reusable. If removed, install a new one.

Loading Rack Unit

Disassembly Procedure

1. Slide the Loading Rack Unit as indicated by the arrow. Then, pull up on the Loading Rack Unit.

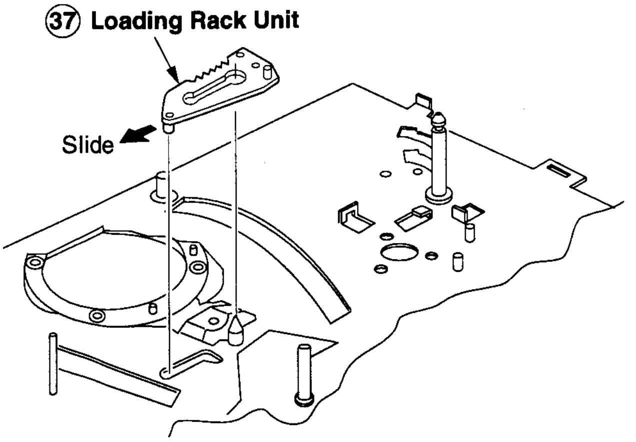

㊲ Loading Rack Unit
Slide

Fig. J15

DISASSEMBLY/ASSEMBLY PROCEDURES OF CASSETTE UP ASS'Y

Top Plate, Wiper Arm Unit, and Holder Unit

Disassembly Procedure

1. Remove Top Plate by releasing 2 Locking Tabs (A) on the left side and 2 Locking Tabs (B) on the right side of the Top Plate.
2. Remove Wiper Arm Unit by releasing 2 Locking Tabs (C). Then, remove the Holder Unit.

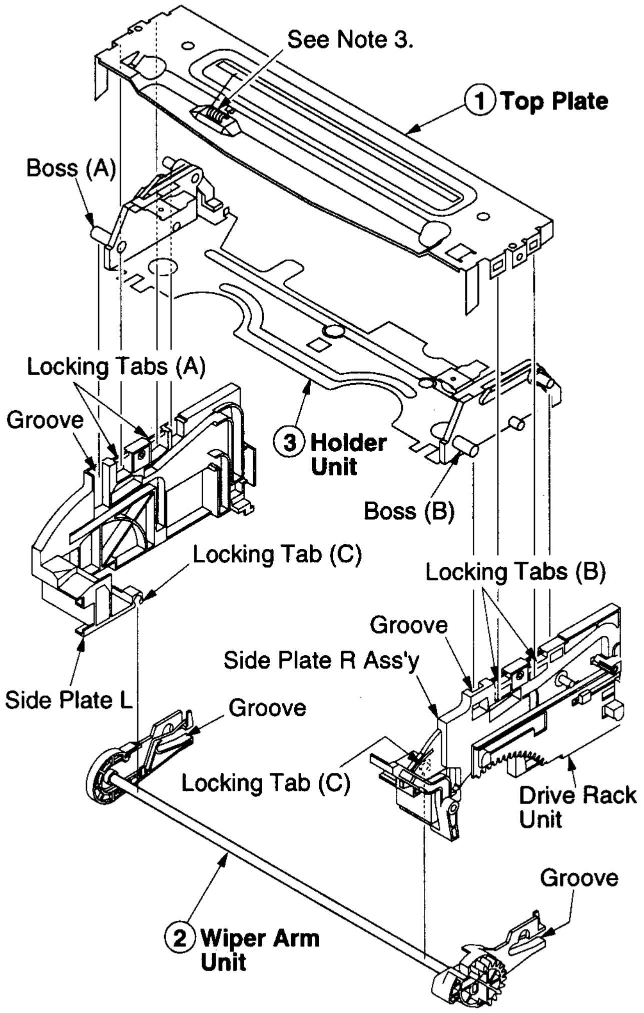

See Note 3.
① Top Plate
Boss (A)
Locking Tabs (A)
Groove
③ Holder Unit
Boss (B)
Locking Tab (C)
Locking Tabs (B)
Groove
Side Plate R Ass'y
Side Plate L
Groove
Locking Tab (C)
Drive Rack Unit
Groove
② Wiper Arm Unit

Fig. K1-1

Reassembly Notes

1. **Alignment of Wiper Arm Unit and Drive Rack Unit**
   1) Slide the Drive Rack Unit to the far right as indicated by the arrow.
   2) Install the Wiper Arm Unit so that the hole on the Wiper Arm Unit is aligned with the hole on the Drive Rack Unit.

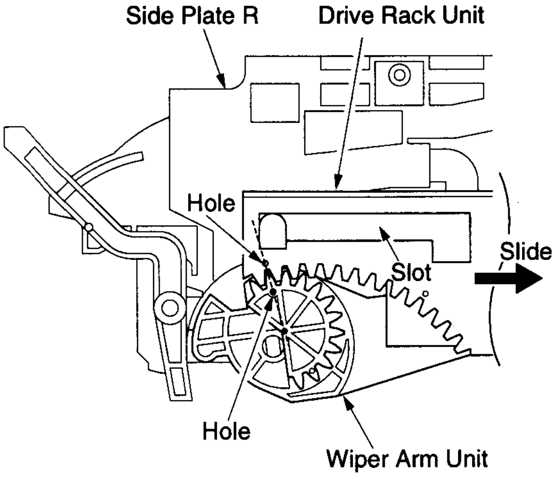

Side Plate R
Drive Rack Unit
Hole
Slot
Slide
Hole
Wiper Arm Unit

Fig. K1-2

2. **Installation of Holder Unit**
   1) Turn the Wiper Arm Unit so that the grooves on each end are aligned with the grooves on Side Plate L and R.
   2) Insert Holder Unit boss (A) and (B) into the grooves.
   3) Finally, in the EJECT Position, confirm that the protrudence on the Wiper Arm Unit is aligned with the indentation on the Drive Rack Unit.

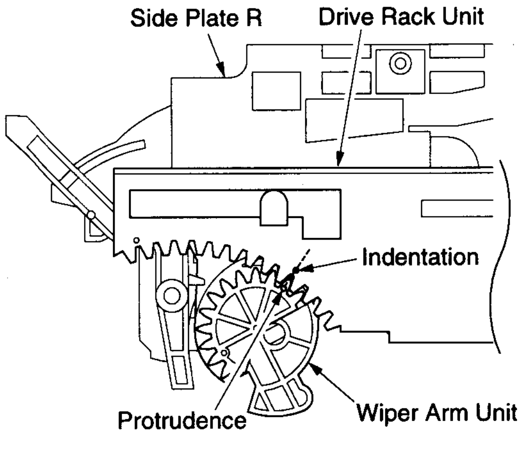

Side Plate R
Drive Rack Unit
Indentation
Protrudence
Wiper Arm Unit

Fig. K1-3

3. As an ESD countermeasure, make sure the spring is in contact with Top Cover.

Sensor Cover, Opener Lever, and Drive Rack Unit

Disassembly Procedure

1. Remove the Sensor Cover by releasing Locking Tab (D).
2. Remove the Opener Lever by releasing Locking Tab (E). Then remove the Drive Rack Unit.

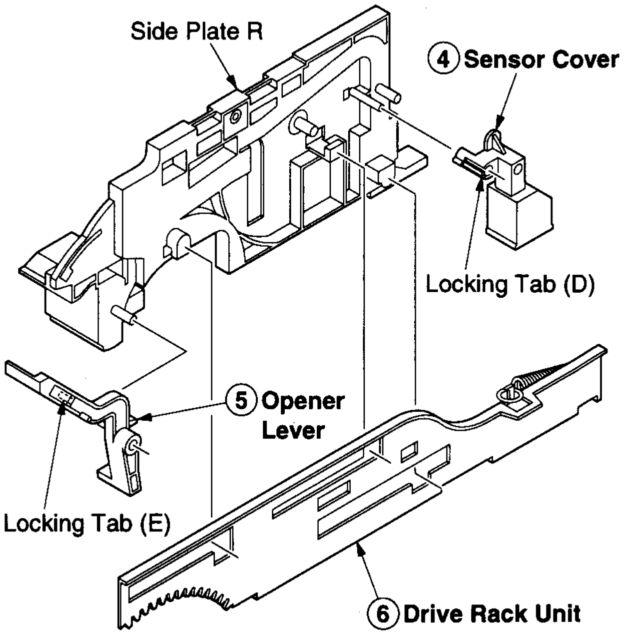
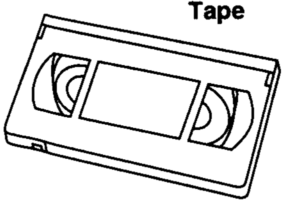

Side Plate R
④ Sensor Cover
Locking Tab (D)
⑤ Opener Lever
Locking Tab (E)
⑥ Drive Rack Unit

Fig. K2

ADJUSTMENT PROCEDURES

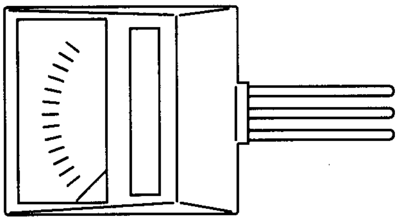
SERVICE FIXTURES AND TOOLS

VFMS0003H6 **VHS Alignment Tape**

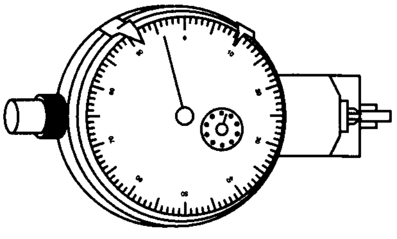


Video	Color Bar & Monoscope
Audio	6kHz(MONO)

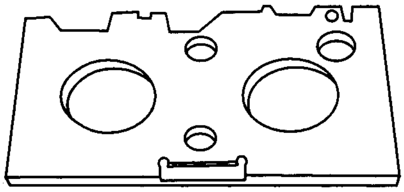
Back Tension Meter
(Made in USA., Purchase Locally)



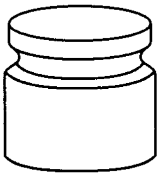
VFKS0009 **Reel Table Height Fixture**



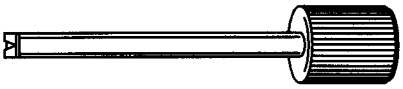
VFKS0010 **Post Adjustment Plate**



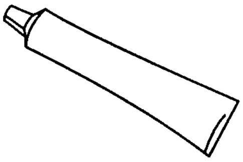
VFKS0081 **Grease**



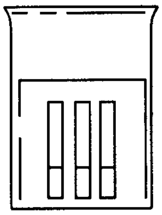
VFK0329 **Post Adjustment Driver**



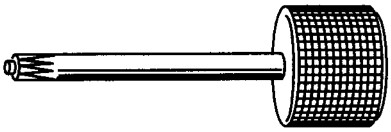
VFK1301 **Silicon Grease**



VFK27 **Head Cleaning Stick**

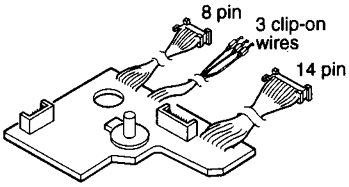


VFK0330 **H-Position Adjustment Driver**

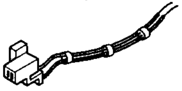


VUZS0002 **Extension Cable Kit**

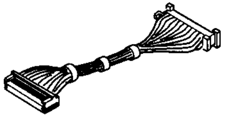
Mode Select SW. Ass'y
(VUVS0001)



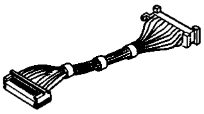
Extension Cable -1
(VUVS0002)



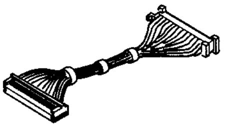
Extension Cable -2
(VUVS0004) for 4 Head Model



Extension Cable -2
(VUVS0005) for 2 Head Model



Extension Cable -2
(VUVS0003) for Hi-Fi Model



MECHANICAL ADJUSTMENT

CLEANING PROCEDURE FOR THE UPPER CYLINDER UNIT

1. While slowly turning the Upper Cylinder Unit counterclockwise by hand, gently rub the Video Heads with a Head Cleaning Stick (VFK27) moistened with Ethanol. When using a Cleaning Cassette, make sure to use "DRY" type only and be aware that excessive use can shorten head life.

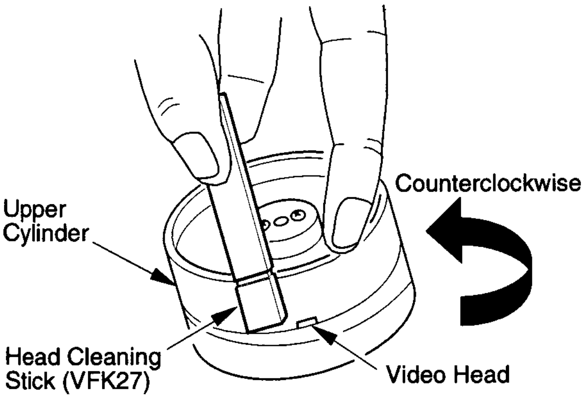


Fig. M1

Note:

1) Do not rub vertically or apply excess pressure to the Video Heads.
   Do not turn the Upper Cylinder Unit clockwise while cleaning.
2) After cleaning, use a Dry Head Cleaning Stick (VFK27) to remove any Ethanol remaining on the cylinder tape path. Otherwise, tape damage will occur.

ADJUSTMENT PROCEDURES

TENSION POST ADJUSTMENT

Purpose:
To maintain a constant tape tension so that the tape runs with stability by performing preliminary adjustment.

Symptom of Misadjustment:
1) If the adjusted value is below the specification, the tape tension is not sufficient, thus causing a tape slack.
2) If the adjusted value is above the specification, the tape tension is too high, thus causing tape damage.

Equipment Required:
2 mm Hex. Wrench .... (Purchase Locally)

1. Remove the Cassette Up Ass'y.
2. Plug the AC plug into an AC outlet.
3. Place the unit in the Service Mode. Refer to "Service Mode" in the "Service Notes" section of this manual.
   The power comes on and the unit goes into the PLAY Mode.
4. Using a (2 mm) Hex. Wrench, adjust the nut on the Tension Adjust Piece (counterclockwise only) so that there is a space of 1 mm between the left edge of the P1 Post and the right edge of the Tension Post. Make sure that the center of the Hex. Wrench hole is within Area "A".
5. After adjustment, remove the Hex. Wrench.
6. Press the STOP/EJECT button to place the unit in the EJECT Mode.
7. Release the unit from the Service Mode. Refer to "Service Mode" in the "Service Notes" section of this manual.

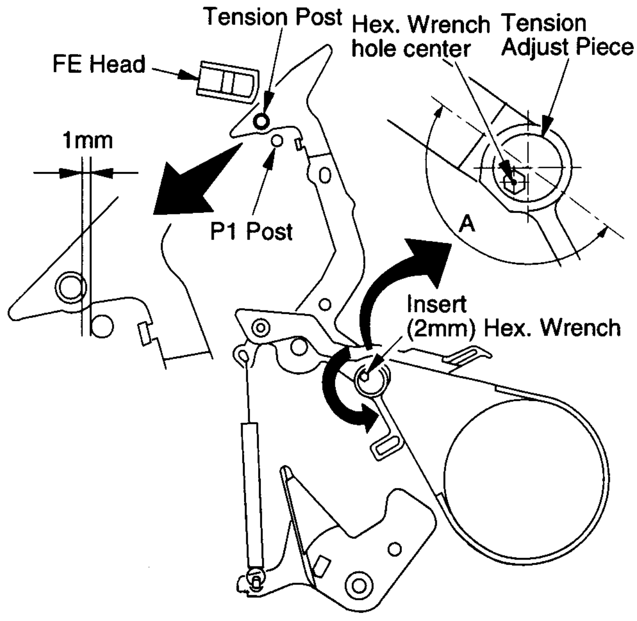


Fig. M2

BACK TENSION CONFIRMATION

Purpose:
To fine adjust the Back Tension so that the tape runs smoothly with a constant tension.

Symptom of Misadjustment:

1) If the tape tension is less than the specified value, the tape cannot come into proper contact with the Video Heads, resulting in poor picture playback.
2) If the tape tension is too high, the tape will soon be damaged.

Measurement Procedure

Equipment Required:
Back Tension Meter (Made in U.S.A., Purchase Locally)
VHS Cassette Tape (120-Minute Tape)

Specification .... 25 +/- 2.5g

1. Play back a T120 cassette tape from the beginning for approx. 10 to 20 seconds to stabilize tape movement.
2. Insert a Tension Meter into tape path and measure the back tension.
3. If the reading is out of specification, make sure that there is no dust or foreign material between the Tension Band of Tension Arm Unit and the Reel Table.
   If cleaning does not correct the tension measurement, replace the Tension Spring and the Tension Arm Unit.

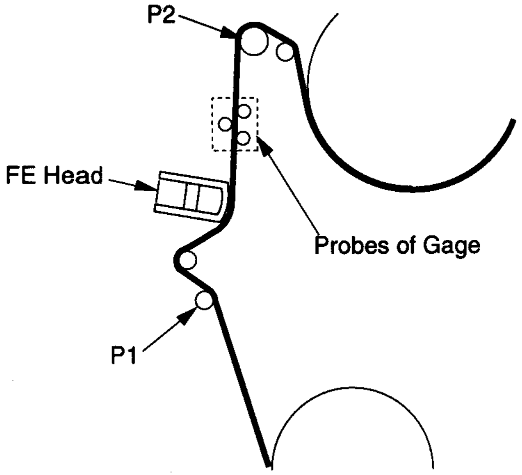
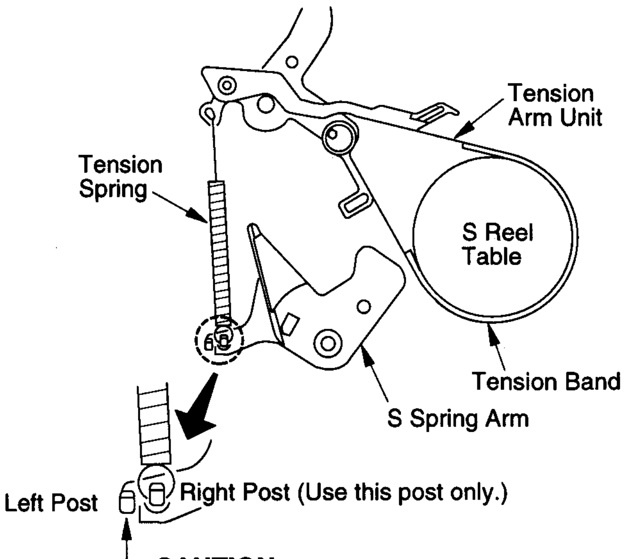


Fig. M3-1

Note:

1) Be sure that the three probes of the meter are all in solid contact with the tape, but not touching any other parts of the mechanism.
2) It is recommended that measurements be repeated at least three (3) times because the tension meter is very sensitive to external vibrations.



CAUTION:
The Left Post will be deleted on running change basis.
DO NOT attach the Spring to the Left Post.

Fig. M3-2

REEL TABLE HEIGHT ADJUSTMENT

Purpose:
To align the height of Supply and Take-Up Reel Tables properly.

Symptom of Misadjustment:
If the height of the Reel Table is not properly aligned, the tape will eventually be damaged.

Equipment Required:
Post Adjustment Plate .... (VFKS0010)
Reel Table Height Fixture .... (VFKS0009)

Specification .... 0 +/- 0.2mm

1. Remove the Cassette Up Ass'y.
2. Position the Post Adjustment Plate over the reels.
3. Place the reel table height fixture on the Post Adjustment Plate so that the foot of the fixture sits in the cutout portion of the Post Adjustment Plate. Then zero the fixture.

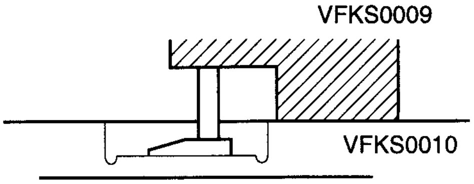


Fig. M4-1

4. Measure to the top edge of each reel table. The height should be 0 +/- 0.2 mm. If the height is not within the specification, add or remove Reel Washers (under the reel table) as necessary.

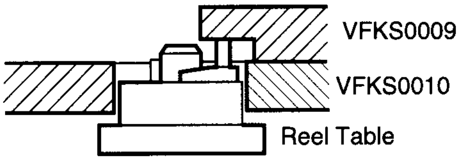


Fig. M4-2

Note:
Reel Washers are available in one size (0.25 mm) only.

FG HEAD GAP ADJUSTMENT

Purpose:
To properly pick up the FG Signal.

Symptom of Misadjustment:
If the FG Signal is not properly picked up, Servo Operation cannot be achieved.

Equipment Required:
Oscilloscope

Specification .... 0.13 +/- 0.02mm

1. Remove the VCR Chassis Unit and then place it upside down.
2. Remove the Main C.B.A.
3. Slightly loosen Black Screw (A). Then set the Screwdriver (#1 or #2 Phillips Driver) into the Hole (A). Turn the screwdriver counterclockwise until the FG Head touches the rotor. Then turn it slightly clockwise to the clearance as specified.
4. Tighten Black Screw (A).
5. Reinstall the Main C.B.A.

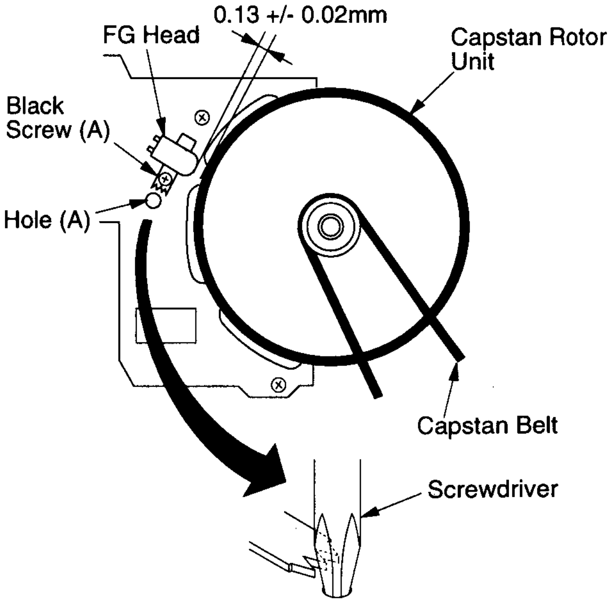


Fig. M5

Note:
Do not touch the outside circumference of the rotor surface with any tool and keep magnetic material away from the rotor magnet (especially metal particles).

Confirmation of Signal Level
1) Supply a Video Signal to the Video Input Jack.
2) Insert a cassette tape and place the unit in SLP recording mode.
3) Connect the oscilloscope to Pin 7 of P2502 on the Capstan Stator Unit.
Confirm that the signal level is greater than 10mVp-p.

P2 AND P3 POST HEIGHT ADJUSTMENT (PRELIMINARY ADJUSTMENT)

Purpose:
To properly align the position of the tape with the Cylinder Lead so that the tape runs with stability.

Symptom of Misadjustment:
1) Since the Envelope Waveform Signal cannot be tracked properly, the Playback picture will be poor.
2) Since the tape does not run smoothly, the tape will eventually be damaged.
3) Tape interchangeability is poor.

Equipment Required:
Post Adjustment Plate .... (VFKS0010)
Reel Table Height Fixture .... (VFKS0009)
Post Adjustment Driver .... (VFK0329)

1. Remove the Cassette Up Ass'y.
2. Position the Post Adjustment Plate over the reels.
3. Place the fixture on the Post Adjustment Plate and zero the fixture (DO NOT use the cut-out portion of the post adjustment plate.)

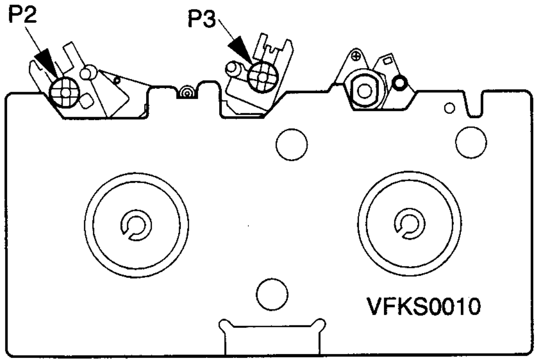

P2
P3
VFKS0010

Fig. M6-1

4. Lower each post below the top edge of the Post Adjustment Plate. Then, raise each post until it contacts the foot of the Reel Table Height Fixture. For proper adjustment, the foot of that should be positioned as shown.

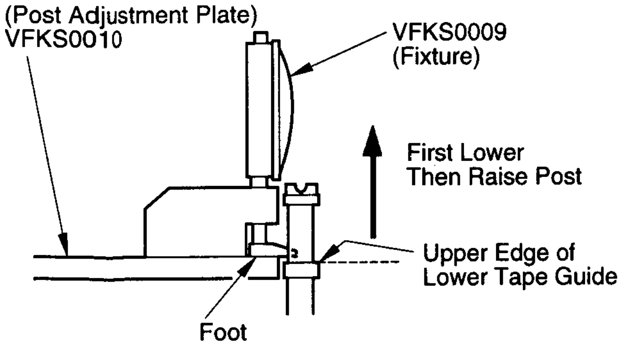

(Post Adjustment Plate)
VFKS0010
VFKS0009
(Fixture)
First Lower
Then Raise Post
Upper Edge of
Lower Tape Guide
Foot

Fig. M6-2

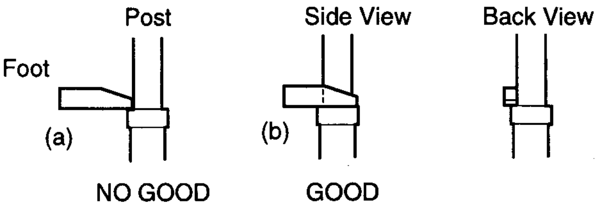

Post
Side View
Back View
Foot
(a)
(b)
NO GOOD
GOOD

Fig. M6-3

CAUTION:
1) Overtightening P2 and P3 posts may cause the threads to strip.
2) Upon completion of this procedure, perform the "Envelope Output Adjustment/Confirmation Procedures."

TAPE INTERCHANGEABILITY ADJUSTMENT/CONFIRMATION (FINAL ADJUSTMENT)

Note:
To perform these adjustment/confirmation procedures, set the tracking to the neutral position.

Equipment Required:
Dual Trace Oscilloscope
VHS Alignment Tape .... (VFMS0003H6)
Post Adjustment Driver .... (VFK0329)
H-Position Adjustment Driver .... (VFK0330)

1. ENVELOPE OUTPUT ADJUSTMENT/ CONFIRMATION

Purpose:
To achieve a satisfactory picture and secure precise tracking.

Symptom of Misadjustment:
If the envelope is output poorly, much noise will appear in the picture. Then the tracking will lose precision and the playback picture will be distorted by any slight variation of the tracking control circuit.

Equipment Required:
Post Adjustment Driver .... (VFK0329)

1. Connect the oscilloscope to TP3002 on the Video Signal Process Section of the Main C.B.A. Use TP6205 as a trigger.
2. Place a jumper between TP6003 on the Video Signal Process Section and +5V(TP6009) on the System Control Section of the Main C.B.A. to defeat Auto Tracking.
3. Eject the tape and insert it again to access the Neutral Tracking position.
4. Play back the alignment tape.
5. With Post Adjust Driver, adjust P2 and P3 post height so that the envelope waveform (V_1/V-max. is 0.7 or more.) becomes as flat as possible (No envelope drop). If the envelope drop appears on the left-half of the waveform, adjust P2 post height. If the envelope drop appears on the right-half of the waveform, adjust P3 post height.

Envelope Waveform

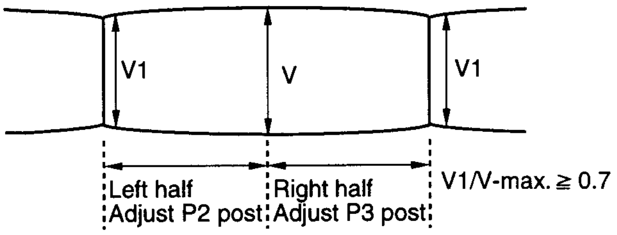


Fig. M7-1

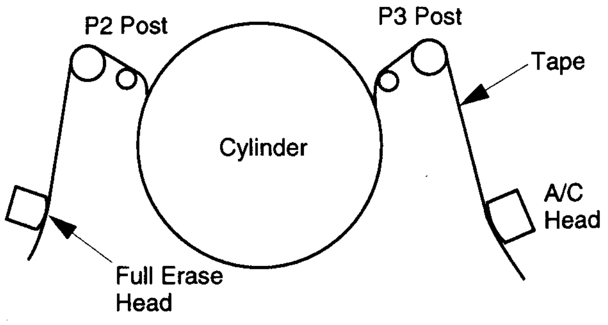


Fig. M7-2

Note:
To confirm adjustment, press the Tracking Control Up or Down button on remote control. Make sure that the envelope waveform remains flat. If not, readjust P2 and/or P3 post heights.

6. After adjustment, confirm that the tape travels without curling at P2 and P3 posts.
7. Remove the jumper after completing the adjustment procedure.

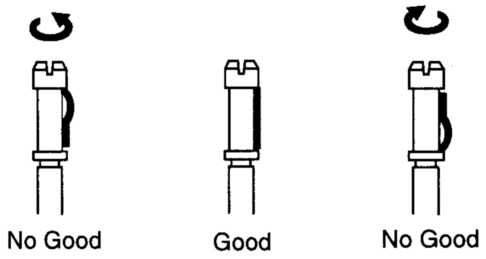


Fig. M7-3

Note:
Overtightening P2 and P3 posts may cause the threads to strip.

2. A/C HEAD TILT CONFIRMATION

Purpose:
To confirm that the tape runs smoothly. In particular, confirm that the tape properly picks up the Audio Signal at the upper part of the head and the Control Signal at the lower part of the head.

Symptom of Misadjustment:
If the tilt of the A/C Head is poorly adjusted, the tape will eventually be damaged. An intermittent Blue screen may be seen in Playback.

1. Play back a T120 cassette tape and check that the tape travels smoothly between the upper and lower guides of the P4 post.
2. If necessary, adjust Black Screw (B) clockwise until the tape begins to curl at the lower edge of the P4 post. Then adjust the screw counterclockwise until the curling is eliminated.

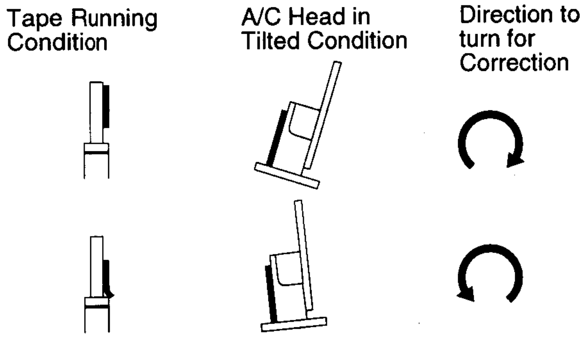

Tape Running Condition
A/C Head in Tilted Condition
Direction to turn for Correction

Fig. M8

3. A/C HEAD HEIGHT CONFIRMATION

The height of the A/C Head replacement part is preset at the factory.

Purpose:
To be sure the tape runs properly along the Control Head.

Symptom of Misadjustment:
If the control signal is not properly picked up, Servo Operation cannot be achieved. A Blue screen will be seen in Playback.

This confirmation is required when the A/C Head is replaced.

1. Play back a T120 cassette tape and check that the lower edge of the tape runs approximately 0.25 mm above the lower edge of the A/C Head.
2. If necessary, adjust Black Screws (A) and (B) clockwise to lower the tape or counterclockwise to raise.

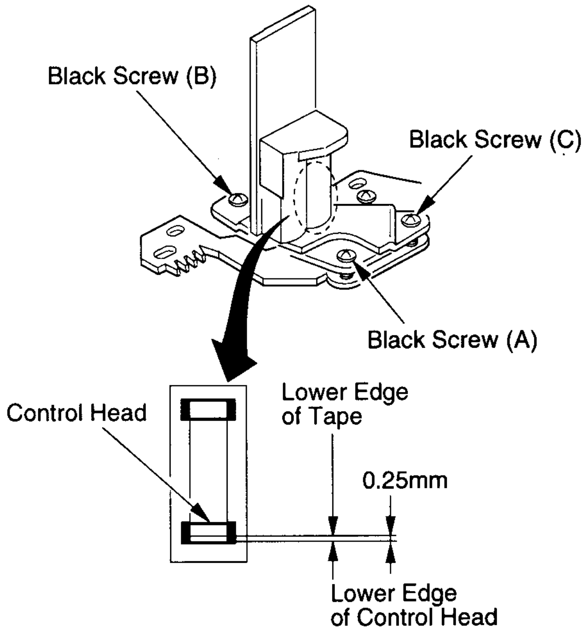


Fig. M9

4. A/C HEAD AZIMUTH ADJUSTMENT

Purpose:
To adjust the position and height of the A/C Head so that it meets the tape tracks properly.

Symptom of Misadjustment:
If the position of the A/C Head is not properly adjusted, the Audio S/N Ratio is poor.

1. Connect the oscilloscope to the audio output jack on the rear side of the deck.
2. Play back the 6kHz Monaural Audio portion of the alignment tape.
3. Adjust Black Screw (C) on the A/C Head base so that the output level is at maximum.

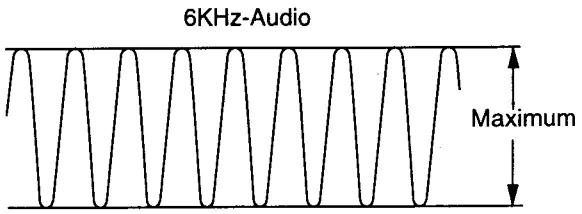


Fig. M10

4. Confirm the height of the A/C Head is proper. If not, readjust Black Screws (A) and (B).

5. A/C HEAD HORIZONTAL POSITION ADJUSTMENT

Purpose:
To adjust the Horizontal Position of the A/C Head.

Symptom of Misadjustment:
If the Horizontal Position of the A/C Head is not properly adjusted, a maximum envelope cannot be obtained at the Neutral Position of the Tracking Control Circuit.

Place a jumper between TP6003 on the Video Signal Process Section and +5V(TP6009) on the System Control Section of the Main C.B.A. to defeat Auto Tracking.

1. Eject the tape and insert it again to access the Neutral Tracking position. Connect the oscilloscope to TP3002 on the Video Signal Process Section of the Main C.B.A. Use TP6205 as a trigger.
2. Play back the alignment tape and confirm that the RF envelope appears.
3. If adjustment is required, loosen the Black Screw (D) and tighten it lightly. Set the H-Position Adjustment Driver into the Hole (A). Then slowly turn the fixture either clockwise or counterclockwise so that the envelope is at maximum.
4. Before finding the center of the maximum period of the envelope, rotate the fixture back and forth slightly to confirm the limits on either side of the maximum period.
5. Push the Tracking Control Up Button (on the Remote Control) several times (count the number of times pushed) until the maximum envelope is reduced to 1/2.
6. Reset the tracking to the neutral position by ejecting the tape and reinserting it. Push the Tracking Control Down Button (on the Remote Control) several times (count the number of times pushed) until the maximum envelope is reduced to 1/2.
7. If the number of pushing is not the same, then loosen the Black Screw (D) and set the H-Position Adjustment Driver into the Hole (A) to find the center point. Then repeat the above procedure to determine the center point.
8. Tighten Black Screw (D).
9. Remove the jumper between TP6003 and +5V(TP6009).

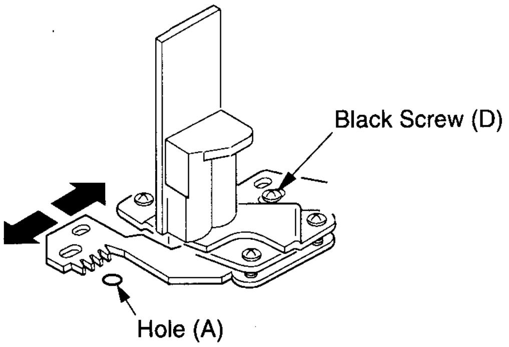


Fig. M11

Note:
Old type of H-Position Adjustment Driver (VFK0136) can be used for this adjustment.

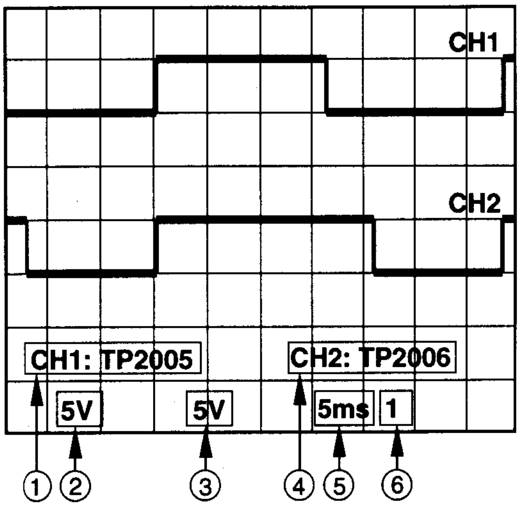
ELECTRICAL ADJUSTMENT

TEST EQUIPMENT

To do all of these electrical adjustments, the following equipment is required.

1. Dual-Trace Oscilloscope
   Voltage Range : 0.001 to 50V/Div.
   Frequency Range : DC to 50MHz
   Probes : 10:1, 1:1
2. Color TV Receiver or Monitor
3. Plastic Tip Driver and Non-Metal Driver
4. Isolation Transformer (Variable)
5. VHS Alignment Tape (VFMS0003H6)
6. AC Millivolt Meter
   Voltage Range : 0 to 1Vrms.
7. MTS/SAP Signal Generator
   (TV Multi-Channel Sound Modulator (U.S.A.))

HOW TO READ THE ADJUSTMENT PROCEDURES



1. Connecting Point
2. Volts/DIV
3. Volts/DIV
4. Connecting Point
5. Time/DIV
6. Trigger Channel of the Scope
   1 : CH1
   2 : CH2

Fig. E1

PG SHIFTER ADJUSTMENT

Purpose:
Determine the Video Head Switching Point during Playback.

Symptom of Misadjustment:
May cause Head Switching Noise and/or Vertical Jitter.

Test Point : TP3001 (Main C.B.A.)
TP6205 (Main C.B.A.)
Adjustment : R6201 (Main C.B.A.)
Specification : T = 6 +/- 1H (0.38 +/- 0.06msec.)
Mode : SP Playback
Equipment : Oscilloscope

1. Connect the channel-1 scope probe to TP3001 and the channel-2 scope probe to TP6205. Trigger from channel-2.
2. Playback the VHS alignment tape and adjust the R6201 (PG SHIFTER) so that the leading edge of the head switching pulse is placed 6H +/- 1H (0.38 +/- 0.06msec.) before the start of the vertical sync pulse.

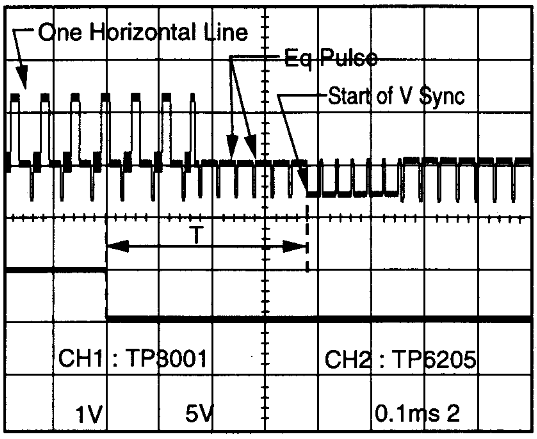


Fig. E2

INPUT LEVEL ADJUSTMENT
(Model : F, G, H)

Purpose:
To fix the output level of Tuner.

Symptom of Misadjustment:
The L and R channels of the STEREO signal will not be separated properly.
The L channel will contain part of the R channel signal or vice versa.

Test Point : **Pin 4 of U4901** **(Main C.B.A.)**
Adjustment : **R7007** **(Main C.B.A.)**
Specification : **245 +/- 8mVrms (693 +/- 23mVp-p)**
Input : Antenna Input Terminal
MONO 300Hz +/- 5Hz 100% Modulating
Mode : STOP
Equipment : AC Millivolt Meter,
MTS/SAP Signal Generator

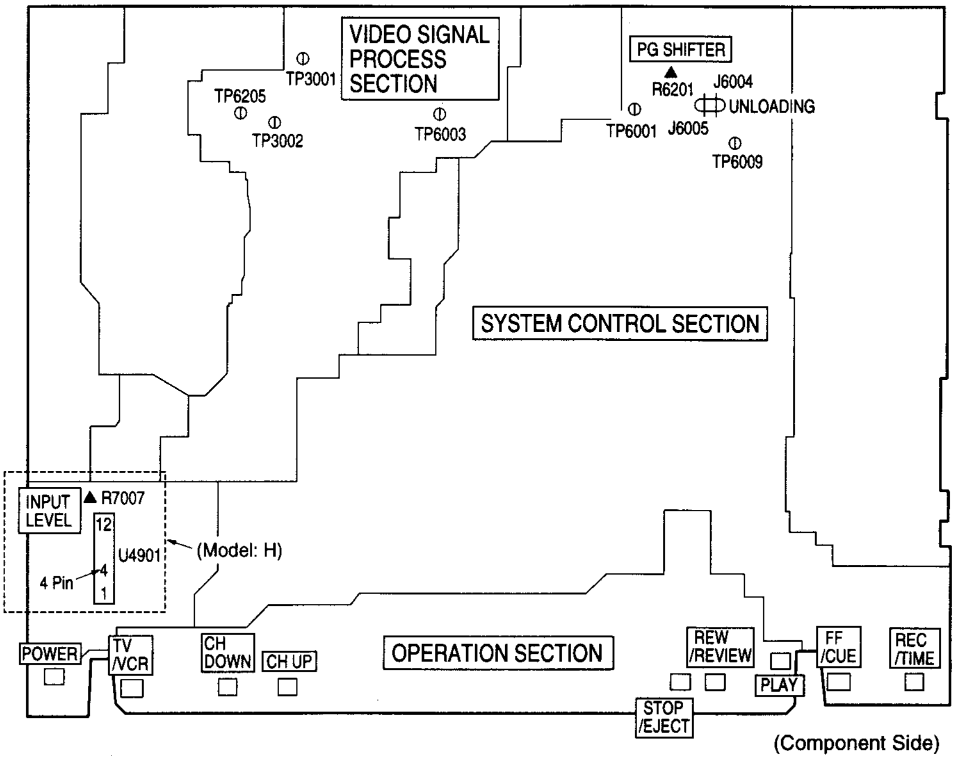
1. Connect the AC Millivolt Meter to pin 4 of U4901.
2. Connect the MTS/SAP Signal Generator to the RF Input on the VCR. Set the MTS/SAP Signal Generator as follows.
   MONO
   300Hz +/- 5Hz
   100% Modulating
3. Tune the VCR to the appropriate channel (same as that provided by the signal generator) and adjust the R7007 ((MPX) INPUT LEVEL) so that the voltage at pin 4 of U4901 is 245 +/- 8mVrms.

Note:
If the generator cannot produce 100% modulation, multiply the specification provided in step 3 by the modulation level used (available).

Example:
30% (Modulation) X 245 +/- 8mVrms
(Specification) = 73.5 +/- 2.4 mVrms (New Specification).

TEST POINTS AND CONTROL LOCATION

Main C.B.A. (A, E, H)


VIDEO SIGNAL PROCESS SECTION
TP3001
TP6205
TP3002
TP6003
PG SHIFTER
R6201
J6004
UNLOADING
TP6001
J6005
TP6009
SYSTEM CONTROL SECTION
INPUT LEVEL
R7007
12
U4901
(Model: H)
4 Pin
4
1
POWER
TV /VCR
CH DOWN
CH UP
OPERATION SECTION
REW /REVIEW
PLAY
STOP /EJECT
FF /CUE
REC /TIME

(Component Side)

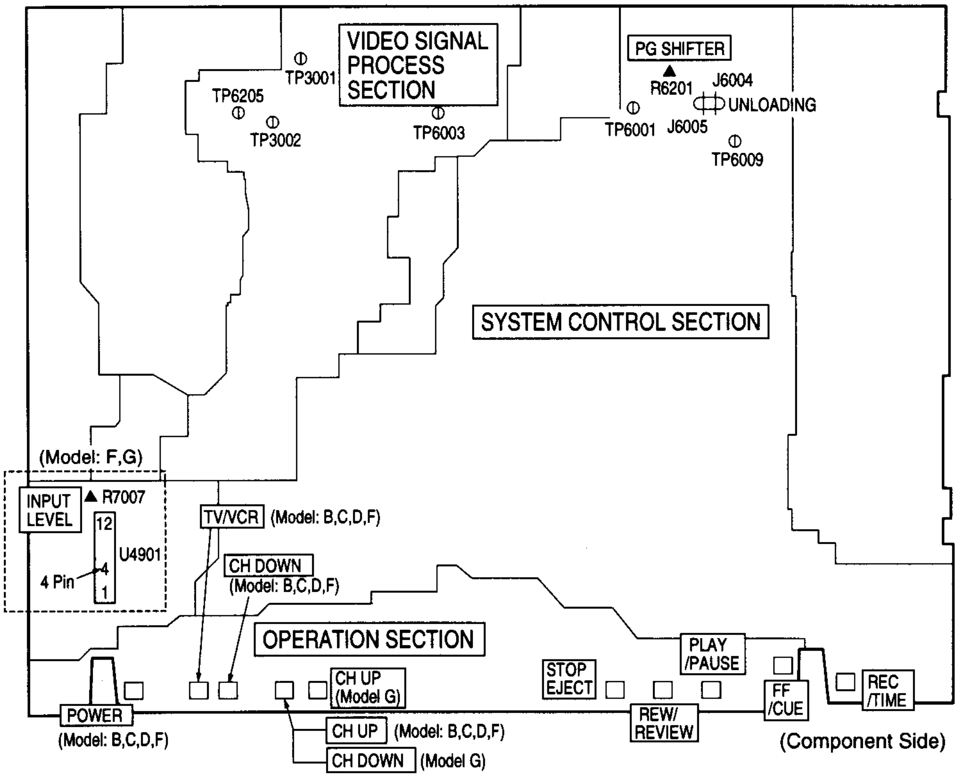
FUNCTION OF IMPORTANT TEST POINTS	
TP3001	Video Signal to Jack
TP3002	PB/REC Video envelope signal
TP6001	Service Test Point (inhibit sensors)
TP6003	defeat Auto tracking function (connect to +5V(TP6009)
TP6009	+5V
TP6205	Head SW.

Test Point Information

⦶ Test Point with a jumper wire across a hole in the P.C.B.

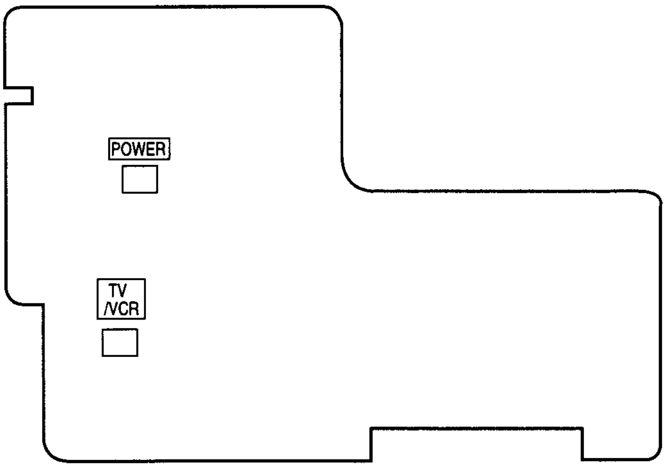
○ Test Point with no Test Pin.

Main C.B.A. (B, C, D, F, G)


VIDEO SIGNAL PROCESS SECTION
TP3001
TP6205
TP3002
TP6003
PG SHIFTER
R6201
J6004
UNLOADING
TP6001
J6005
TP6009
SYSTEM CONTROL SECTION
(Model: F,G)
INPUT LEVEL
R7007
12
U4901
4 Pin
4
1
TV/VCR
(Model: B,C,D,F)
CH DOWN
(Model: B,C,D,F)
OPERATION SECTION
CH UP
(Model G)
STOP
EJECT
PLAY
/PAUSE
FF
/CUE
REC
/TIME
POWER
(Model: B,C,D,F)
CH UP
(Model: B,C,D,F)
CH DOWN
(Model G)
REW/
REVIEW

(Component Side)

Operation C.B.A. (Model: G)


POWER
TV
/VCR

(Component Side)

— MEMO —

SCHEMATIC DIAGRAMS

SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES

Important safety notice

Components identified by the sign ⚠ have special characteristics important for safety. When replacing any of these components. Use only the specified parts.

Replacement parts

1. Do not use the part number shown on this drawing for ordering. The correct part number is shown in the parts list, and may be slightly different or amended since this drawing was prepared.
2. To maintain original function and reliability of repaired units, use only original replacement parts which are listed with their part numbers in the parts list section of the service manual.
3. Parts different in shape or size may be used. However, only interchangeable parts will be supplied as service replacement parts.

Test point information

⦶ :Test point with a jumper wire across a hole in P.C.B.
□→ :Test point with a component lead on the foil side.
▨ :Test point with no test pin.
● :Test point with a test pin.

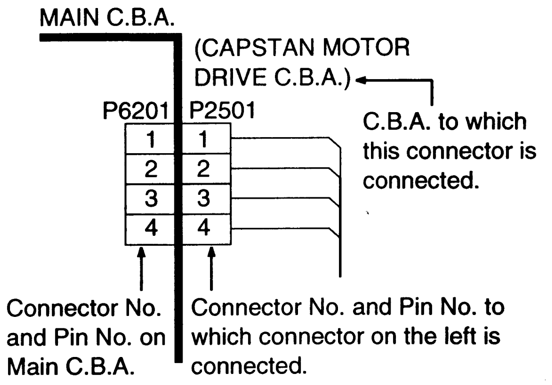
How to read Schematic and C.B.A. Diagrams

1. **The Mark "■ " indicates leaded component.**
   Example: ■ R1002
2. **Voltage Measurement**
   a. Color bar signal in SP mode.
   b. ---:Unmeasurable or not necessary to measure.
3. **Indication for Zener Voltage of Zener Diodes**
   The Zener Voltage of Zener Diodes are indicated as such on Schematic Diagrams.

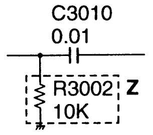
   Example:
   (6.2V)......Zener Voltage

4. **How to identify Connectors on Schematic Diagrams**
   Each connector is labeled with a Connector No. and Pin No. Indicating what it is connected to, in other words, its counter part.
   Connections between large P.C.B.s and small circuit boards are illustrated on the large P.C.B. Schematics.
   Use the interconnection schematic diagram to find the connection between associated connectors.

   Example:
   The connections between C.B.A.s are as shown below.


MAIN C.B.A.
(CAPSTAN MOTOR DRIVE C.B.A.)
P6201
P2501
1
2
3
4
C.B.A. to which this connector is connected.
Connector No. and Pin No. on Main C.B.A.
Connector No. and Pin No. to which connector on the left is connected.

5. **Parts enclosed in dashed lines marked "Z" are not used in any models included in this service manual.**
   Example:

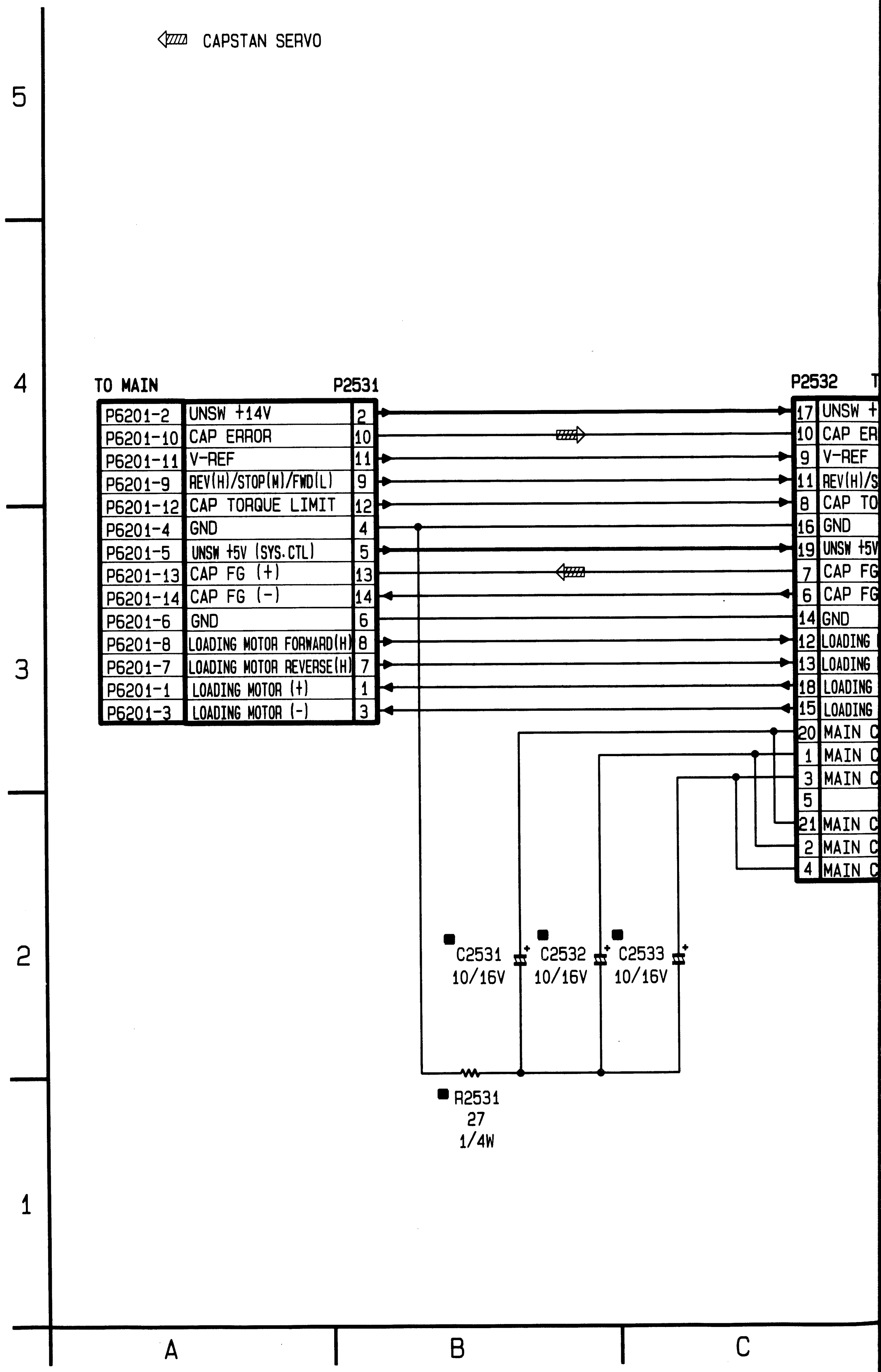

C3010
0.01
R3002
Z
10K

Comparison chart of models & marks used in Schematic and C.B.A. Diagrams

MODEL	MARK
VHQ720	A
PV-7400	B
PV-7401	C
PV-7401-K	D
VHQ740	E
PV-7450	F
PV-7451	G
VHQ760	H
Not used in any models	Z

Note : Refer to item 5 for mark "Z".

JUNCTION SCHEMATIC DIAGRAM


CAPSTAN SERVO
TO MAIN
P2531
P6201-2 UNSW +14V 2
P6201-10 CAP ERROR 10
P6201-11 V-REF 11
P6201-9 REV(H)/STOP(M)/FWD(L) 9
P6201-12 CAP TORQUE LIMIT 12
P6201-4 GND 4
P6201-5 UNSW +5V (SYS.CTL) 5
P6201-13 CAP FG (+) 13
P6201-14 CAP FG (-) 14
P6201-6 GND 6
P6201-8 LOADING MOTOR FORWARD(H) 8
P6201-7 LOADING MOTOR REVERSE(H) 7
P6201-1 LOADING MOTOR (+) 1
P6201-3 LOADING MOTOR (-) 3
P2532
17 UNSW +
10 CAP ER
9 V-REF
11 REV(H)/S
8 CAP TO
16 GND
19 UNSW +5V
7 CAP FG
6 CAP FG
14 GND
12 LOADING
13 LOADING
18 LOADING
15 LOADING
20 MAIN C
1 MAIN C
3 MAIN C
5
21 MAIN C
2 MAIN C
4 MAIN C
C2531 10/16V
C2532 10/16V
C2533 10/16V
R2531 27 1/4W
5
4
3
2
1
A
B
C

chematic Diagrams
nector No. and Pin No.
other words, its counter

and small circuit boards
chematics.
c diagram to find the
nnectors.

s are as shown below.

TOR

C.B.A. to which
this connector is
connected.

nd Pin No. to
on the left is

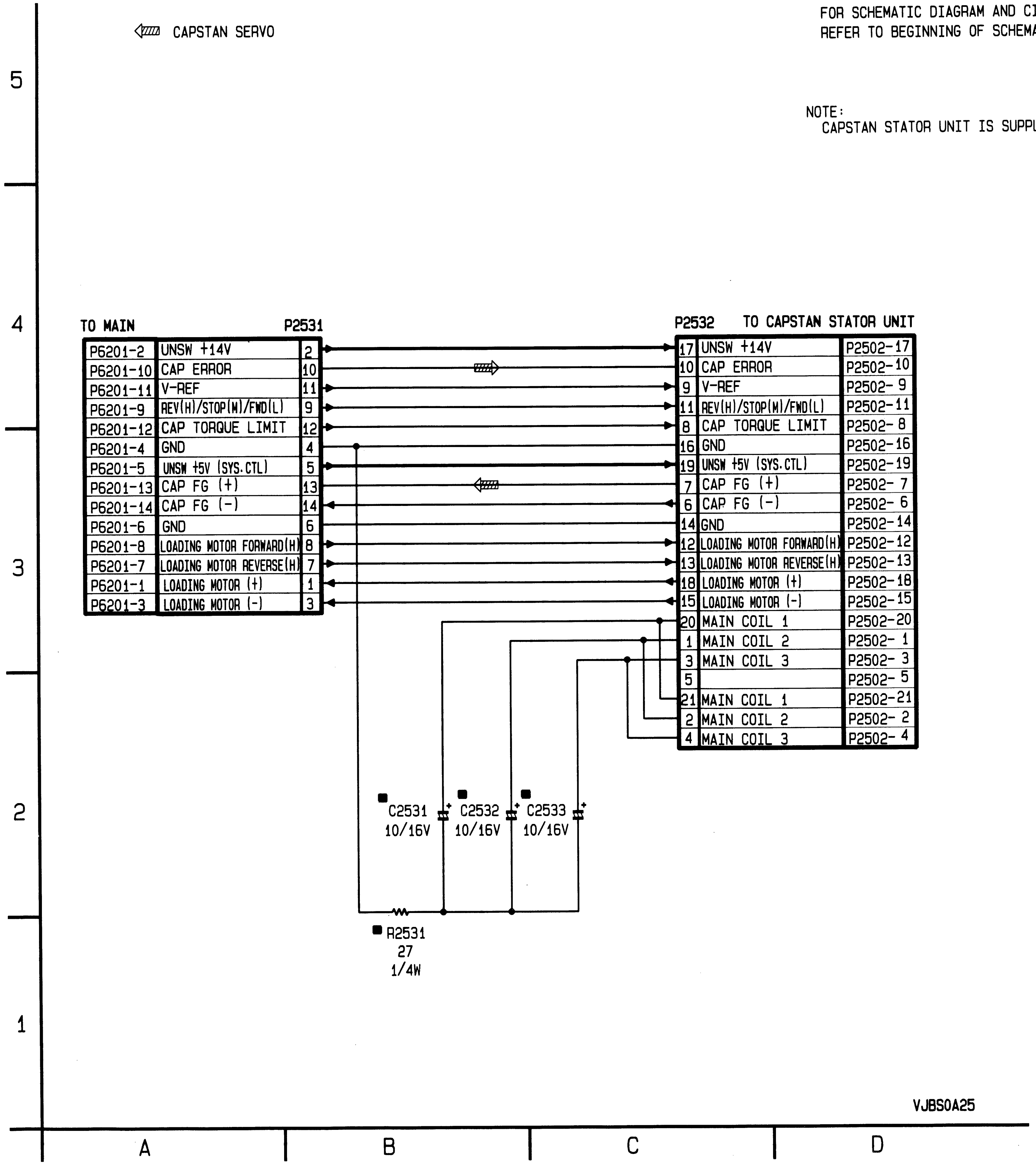
marked "Z" are not
his service manual.

ks used in Schematic

JUNCTION SCHEMATIC DIAGRAM

NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES,
REFER TO BEGINNING OF SCHEMATIC SECTION.

NOTE:
CAPSTAN STATOR UNIT IS SUPPLIED AS A CAPSTAN STATOR KIT ONLY.



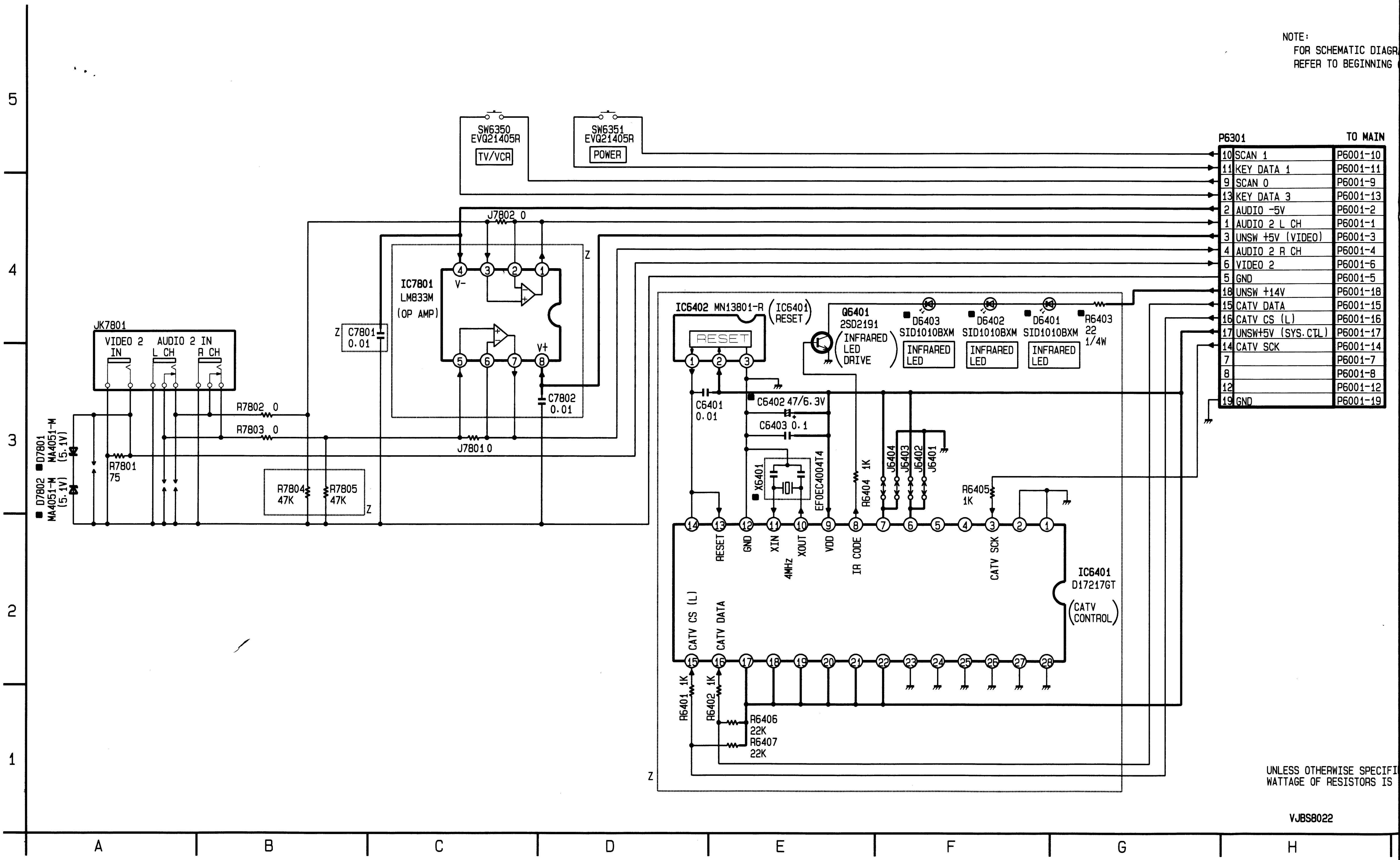
TO MAIN P2531

P6201-2	UNSW +14V	2
P6201-10	CAP ERROR	10
P6201-11	V-REF	11
P6201-9	REV(H)/STOP(M)/FWD(L)	9
P6201-12	CAP TORQUE LIMIT	12
P6201-4	GND	4
P6201-5	UNSW +5V (SYS.CTL)	5
P6201-13	CAP FG (+)	13
P6201-14	CAP FG (-)	14
P6201-6	GND	6
P6201-8	LOADING MOTOR FORWARD(H)	8
P6201-7	LOADING MOTOR REVERSE(H)	7
P6201-1	LOADING MOTOR (+)	1
P6201-3	LOADING MOTOR (-)	3

P2532 TO CAPSTAN STATOR UNIT

17	UNSW +14V	P2502-17
10	CAP ERROR	P2502-10
9	V-REF	P2502- 9
11	REV(H)/STOP(M)/FWD(L)	P2502-11
8	CAP TORQUE LIMIT	P2502- 8
16	GND	P2502-16
19	UNSW +5V (SYS.CTL)	P2502-19
7	CAP FG (+)	P2502- 7
6	CAP FG (-)	P2502- 6
14	GND	P2502-14
12	LOADING MOTOR FORWARD(H)	P2502-12
13	LOADING MOTOR REVERSE(H)	P2502-13
18	LOADING MOTOR (+)	P2502-18
15	LOADING MOTOR (-)	P2502-15
20	MAIN COIL 1	P2502-20
1	MAIN COIL 2	P2502- 1
3	MAIN COIL 3	P2502- 3
5		P2502- 5
21	MAIN COIL 1	P2502-21
2	MAIN COIL 2	P2502- 2
4	MAIN COIL 3	P2502- 4

OPERATION SCHEMATIC DIAGRAM (G)



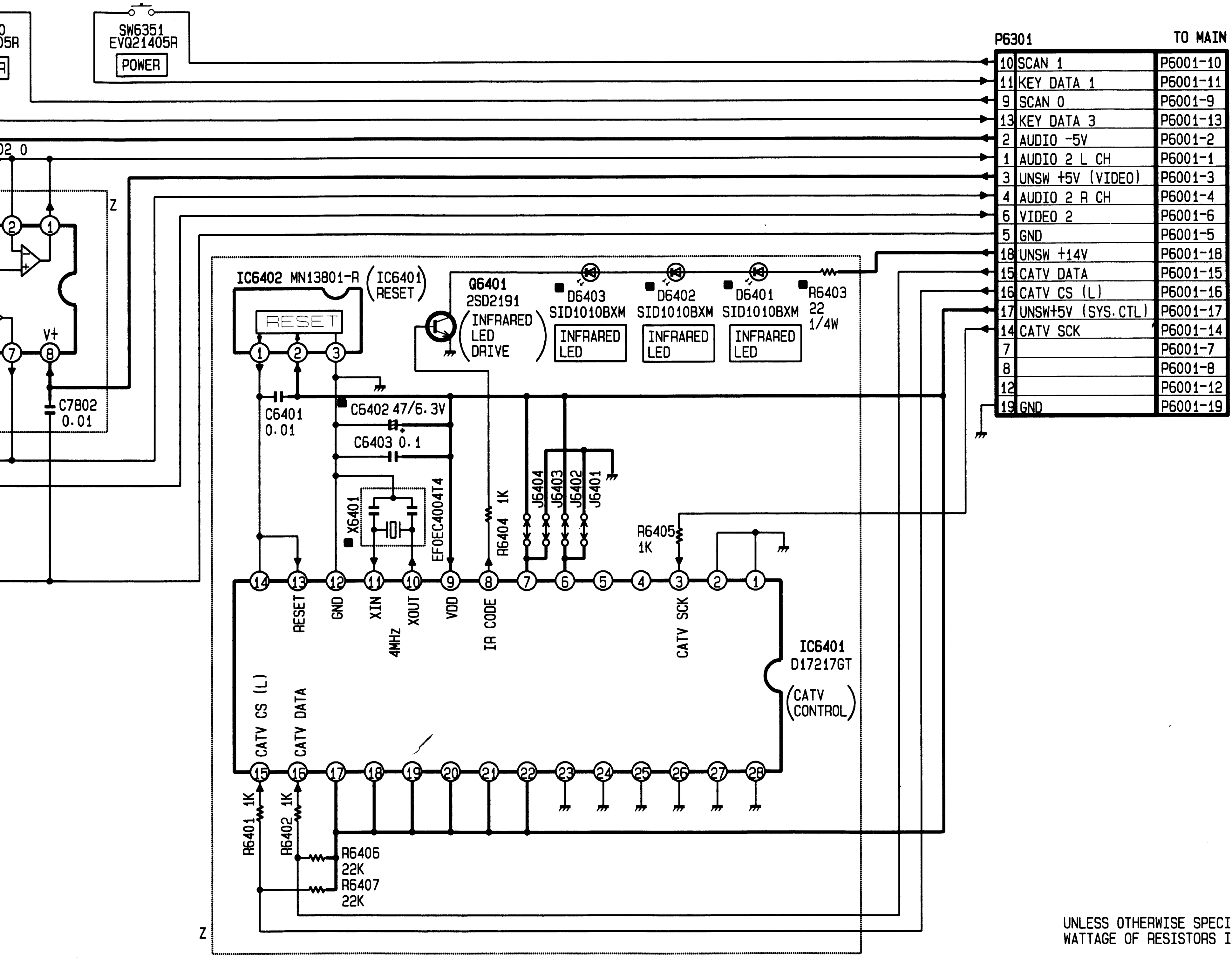
5
4
3
2
1
A
B
C
D
E
F
G
H
SW6350
EVQ21405R
TV/VCR
SW6351
EVQ21405R
POWER
P6301
TO MAIN
10 SCAN 1 P6001-10
11 KEY DATA 1 P6001-11
9 SCAN 0 P6001-9
13 KEY DATA 3 P6001-13
2 AUDIO -5V P6001-2
1 AUDIO 2 L CH P6001-1
3 UNSW +5V (VIDEO) P6001-3
4 AUDIO 2 R CH P6001-4
6 VIDEO 2 P6001-6
5 GND P6001-5
18 UNSW +14V P6001-18
15 CATV DATA P6001-15
16 CATV CS (L) P6001-16
17 UNSW+5V (SYS. CTL) P6001-17
14 CATV SCK P6001-14
7 P6001-7
8 P6001-8
12 P6001-12
19 GND P6001-19
J7802 0
IC7801
LM833M
(OP AMP)
V-
V+
Z
C7801
0.01
C7802
0.01
JK7801
VIDEO 2 IN
AUDIO 2 IN
L CH
R CH
R7802 0
R7803 0
J7801 0
R7801
75
D7802 MA4051-M (5.1V)
D7801 MA4051-M (5.1V)
R7804 47K
R7805 47K
IC6402 MN13801-R
(IC6401 RESET)
RESET
Q6401
2SD2191
(INFRARED LED DRIVE)
D6403 SID1010BXM
D6402 SID1010BXM
D6401 SID1010BXM
INFRARED LED
R6403 22 1/4W
C6401 0.01
C6402 47/6.3V
C6403 0.1
X6401
EF0EC4004T4
R6404 1K
J6404
J6403
J6402
J6401
R6405 1K
RESET
GND
XIN
4MHz
XOUT
VDD
IR CODE
CATV SCK
IC6401
D17217GT
(CATV CONTROL)
CATV CS (L)
CATV DATA
R6401 1K
R6402 1K
R6406 22K
R6407 22K

NOTE:
FOR SCHEMATIC DIAGR
REFER TO BEGINNING

UNLESS OTHERWISE SPECIFI
WATTAGE OF RESISTORS IS

VJBS8022

NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES, REFER TO BEGINNING OF SCHEMATIC SECTION.


SW6351
EVQ21405R
POWER
P6301
TO MAIN
10 SCAN 1 P6001-10
11 KEY DATA 1 P6001-11
9 SCAN 0 P6001-9
13 KEY DATA 3 P6001-13
2 AUDIO -5V P6001-2
1 AUDIO 2 L CH P6001-1
3 UNSW +5V (VIDEO) P6001-3
4 AUDIO 2 R CH P6001-4
6 VIDEO 2 P6001-6
5 GND P6001-5
18 UNSW +14V P6001-18
15 CATV DATA P6001-15
16 CATV CS (L) P6001-16
17 UNSW+5V (SYS.CTL) P6001-17
14 CATV SCK P6001-14
7 P6001-7
8 P6001-8
12 P6001-12
19 GND P6001-19
Z
V+
C7802
0.01
IC6402 MN13801-R
(IC6401 RESET)
RESET
C6401
0.01
C6402 47/6.3V
C6403 0.1
X6401
EF0EC4004T4
Q6401
2SD2191
(INFRARED LED DRIVE)
D6403
SID1010BXM
INFRARED LED
D6402
SID1010BXM
INFRARED LED
D6401
SID1010BXM
INFRARED LED
R6403
22
1/4W
R6404 1K
J6404
J6403
J6402
J6401
R6405
1K
GND
RESET
XIN
4MHz
XOUT
VDD
IR CODE
CATV SCK
IC6401
D17217GT
(CATV CONTROL)
CATV CS (L)
CATV DATA
R6401 1K
R6402 1K
R6406
22K
R6407
22K
Z

UNLESS OTHERWISE SPECIFIED;
WATTAGE OF RESISTORS IS 1/10W.

COMPARISON CHART
OF MODELS & MARKS

MODEL	MARK
VHQ720	A
PV-7400	B
PV-7401	C
PV-7401-K	D
VHQ740	E
PV-7450	F
PV-7451	G
VHQ760	H
Not Used	Z

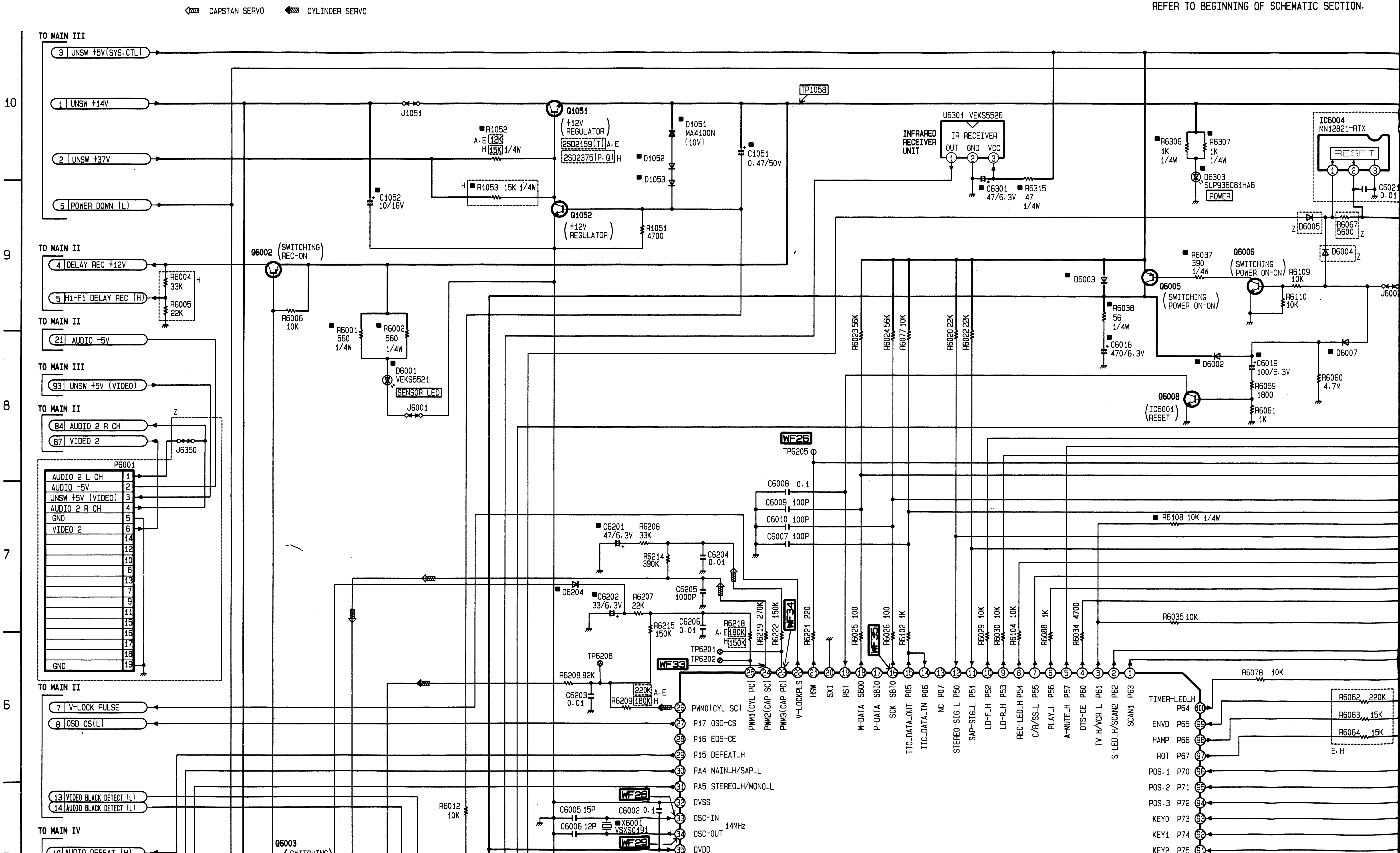
OPERATION VOLTAGE CHART

MODE / PIN NO.	REC	PLAY
IC6401		
1	0	0
2	0	0
3	5.1	5.1
4	---	---
5	---	---
6	0	0
7	0	0
8	0	0
9	5.1	5.1
10	2.6	2.6
11	2.6	2.6
12	0	0
13	5.1	5.1
14	5.1	5.1
15	5.1	5.1
16	5.1	5.1
17	5.1	5.1
18	5.1	5.1
19	5.1	5.1
20	5.1	5.1
21	5.1	5.1
22	5.1	5.1
23	0	0
24	0	0
25	0	0
26	0	0
27	0	0
28	0	0
IC6402		
1	5.1	5.1
2	5.1	5.1
3	0	0
IC7801		
1	0	0
2	0	0
3	0	0
4	-5.0	-5.0
5	0	0
6	0	0
7	0	0
8	5.1	5.1
Q6401		
E	0	0
B	0	0
C	11.0	11.0

MAIN I (POWER SUPPLY/SYSTEM CONTROL/SERVO/OPERATION) SCHEMATIC DIAGRAM (A,E,H)

MC-Service

NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT
REFER TO BEGINNING OF SCHEMATIC SECTION.



CAPSTAN SERVO
CYLINDER SERVO
10
9
8
7
6
TO MAIN III
3 UNSW +5V(SYS.CTL)
1 UNSW +14V
2 UNSW +37V
6 POWER DOWN (L)
TO MAIN II
4 DELAY REC +12V
5 Hi-Fi DELAY REC (H)
R6004 33K
R6005 22K
H
TO MAIN II
21 AUDIO -5V
TO MAIN III
93 UNSW +5V (VIDEO)
TO MAIN II
84 AUDIO 2 R CH
87 VIDEO 2
Z
J6350
P6001
AUDIO 2 L CH
AUDIO -5V
UNSW +5V (VIDEO)
AUDIO 2 R CH
GND
VIDEO 2
GND
TO MAIN II
7 V-LOCK PULSE
8 OSD CS(L)
13 VIDEO BLACK DETECT (L)
14 AUDIO BLACK DETECT (L)
TO MAIN IV
J1051
R1052 A,E 12K H 15K 1/4W
H R1053 15K 1/4W
C1052 10/16V
Q1051 (+12V REGULATOR)
2SD2159(T) A,E
2SD2375(P,Q) H
Q1052 (+12V REGULATOR)
R1051 4700
D1051 MA4100N (10V)
D1052
D1053
C1051 0.47/50V
TP1058
Q6002 (SWITCHING REC-ON)
R6006 10K
R6001 560 1/4W
R6002 560 1/4W
D6001 VEKS5521
SENSOR LED
J6001
INFRARED RECEIVER UNIT
U6301 VEKS5526
IR RECEIVER
OUT GND VCC
C6301 47/6.3V
R6315 47 1/4W
R6306 1K 1/4W
R6307 1K 1/4W
D6303 SLP936C81HAB
POWER
IC6004 MN12821-RTX
RESET
C6021 0.01
D6005 Z
R6067 5600 Z
D6004 Z
R6037 390 1/4W
Q6006 (SWITCHING POWER ON-ON)
R6109 10K
R6110 10K
J6002
D6003
Q6005 (SWITCHING POWER ON-ON)
R6038 56 1/4W
C6016 470/6.3V
D6002
C6019 100/6.3V
R6059 1800
R6061 1K
D6007
R6060 4.7M
Q6008 (IC6001 RESET)
R6023 56K
R6024 56K
R6077 10K
R6020 22K
R6022 22K
WF26
TP6205
C6008 0.1
C6009 100P
C6010 100P
C6007 100P
R6108 10K 1/4W
C6201 47/6.3V
R6206 33K
R6214 390K
C6204 0.01
D6204
C6202 33/6.3V
R6207 22K
C6205 1000P
R6215 150K
C6206 0.01
R6218 A,E 180K H 150K
R6219 270K
R6222 150K
WF34
R6221 220
TP6201
TP6202
WF33
TP6208
R6208 82K
C6203 0.01
R6209 220K A,E 180K H
R6025 100
WF35
R6026 100
R6102 1K
R6029 10K
R6030 10K
R6104 10K
R6088 1K
R6034 4700
R6035 10K
R6078 10K
PWM1(CYL PC)
PWM2(CAP SC)
PWM3(CAP PC)
V-LOCKPLS
HSW
SXI
RST
M-DATA SBO0
P-DATA SBI0
SCK SBT0
IIC_DATA_OUT P05
IIC_DATA_IN P06
NC P07
STEREO-SIG_L P50
SAP-SIG_L P51
LD-F_H P52
LD-R_H P53
REC-LED_H P54
C/R/SS_L P55
PLAY_L P56
A-MUTE_H P57
DTS-CE P60
TV_H/VCR_L P61
S-LED_H/SCAN2 P62
SCAN1 P63
PWM0(CYL SC)
P17 OSD-CS
P16 EDS-CE
P15 DEFEAT_H
PA4 MAIN_H/SAP_L
PA5 STEREO_H/MONO_L
DVSS
OSC-IN
OSC-OUT
14MHz
DVDD
TIMER-LED_H P64
ENVD P65
HAMP P66
ROT P67
POS.1 P70
POS.2 P71
POS.3 P72
KEY0 P73
KEY1 P74
KEY2 P75
R6062 220K
R6063 15K
R6064 15K
E,H
R6012 10K
WF28
C6005 15P
C6006 12P
C6002 0.1
X6001 VSXS0191
WF29
Q6003

※1 IC6001 replacement note:

Model No.	products	replacement parts
VHQ720	MN675048A5B2	MN675048A5B2
VHQ740	MN675048A5B1	
VHQ760	MN675048A5B	

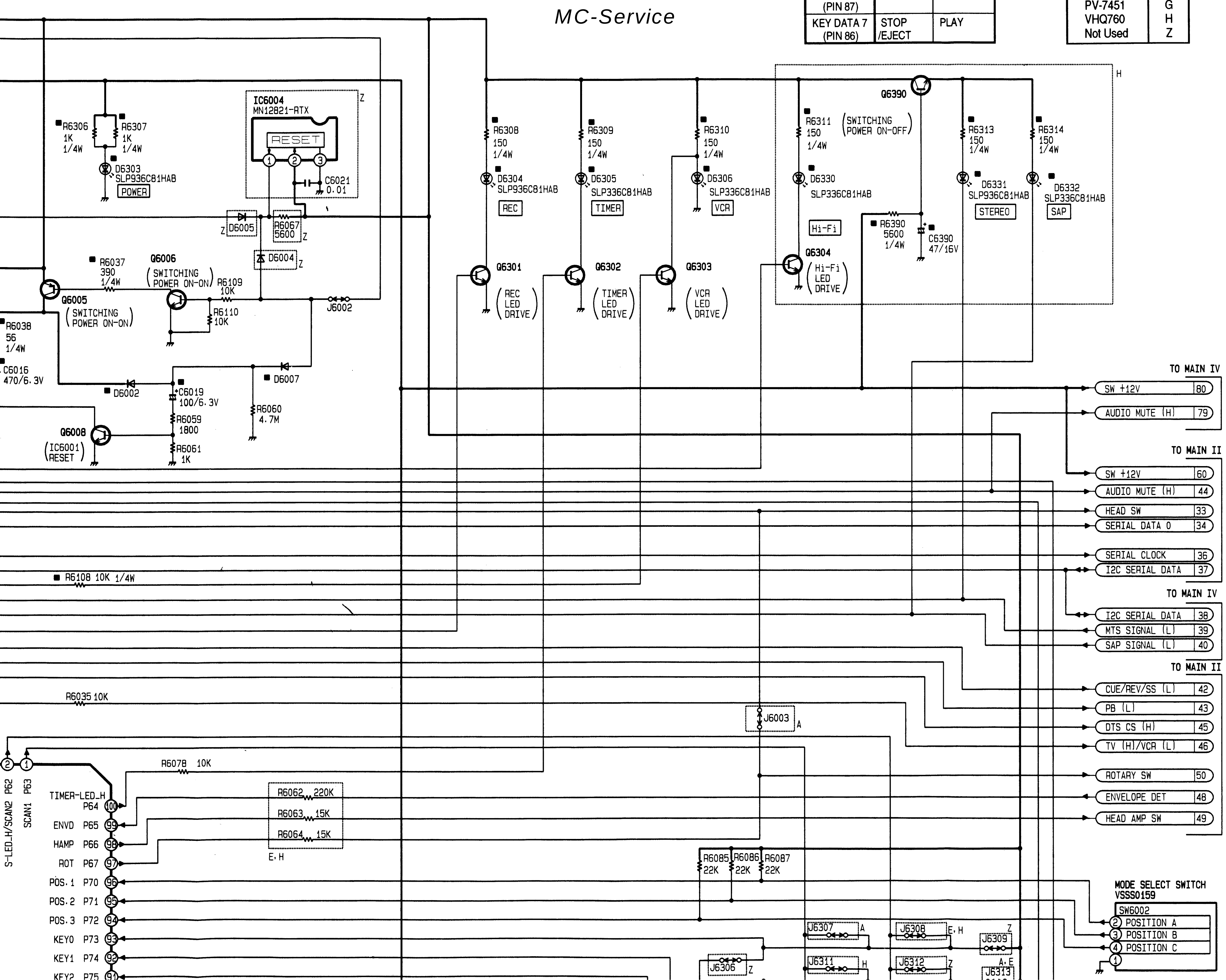
IC6001 KEY MATRIX

KEY DATA IN	SCAN	
	SCAN 1 (PIN 1)	SCAN 2 (PIN 2)
KEY DATA 3 (PIN 90)	POWER	REW /REVIEW
KEY DATA 4 (PIN 89)	TV/VCR	FF/CUE
KEY DATA 5 (PIN 88)	CH UP	-----
KEY DATA 6 (PIN 87)	CH DOWN	REC/TIME
KEY DATA 7 (PIN 86)	STOP /EJECT	PLAY

COMPARISON CHART OF MODELS & MARKS

MODEL	MARK
VHQ720	A
PV-7400	B
PV-7401	C
PV-7401-K	D
VHQ740	E
PV-7450	F
PV-7451	G
VHQ760	H
Not Used	Z

NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES, REFER TO BEGINNING OF SCHEMATIC SECTION.


IC6004
MN12821-RTX
RESET
C6021 0.01
R6306 1K 1/4W
R6307 1K 1/4W
D6303 SLP936C81HAB
POWER
D6005
R6067 5600
D6004
R6037 390 1/4W
Q6006
SWITCHING POWER ON-ON
R6109 10K
R6110 10K
J6002
Q6005
SWITCHING POWER ON-ON
R6038 56 1/4W
C6016 470/6.3V
D6002
C6019 100/6.3V
R6059 1800
R6061 1K
D6007
R6060 4.7M
Q6008
IC6001 RESET
R6308 150 1/4W
D6304 SLP936C81HAB
REC
Q6301
REC LED DRIVE
R6309 150 1/4W
D6305 SLP336C81HAB
TIMER
Q6302
TIMER LED DRIVE
R6310 150 1/4W
D6306 SLP336C81HAB
VCR
Q6303
VCR LED DRIVE
Q6390
R6311 150 1/4W
SWITCHING POWER ON-OFF
D6330 SLP336C81HAB
Hi-Fi
Q6304
Hi-Fi LED DRIVE
R6390 5600 1/4W
C6390 47/16V
R6313 150 1/4W
D6331 SLP936C81HAB
STEREO
R6314 150 1/4W
D6332 SLP336C81HAB
SAP
H
Z
TO MAIN IV
SW +12V 80
AUDIO MUTE (H) 79
TO MAIN II
SW +12V 60
AUDIO MUTE (H) 44
HEAD SW 33
SERIAL DATA 0 34
SERIAL CLOCK 36
I2C SERIAL DATA 37
TO MAIN IV
I2C SERIAL DATA 38
MTS SIGNAL (L) 39
SAP SIGNAL (L) 40
TO MAIN II
CUE/REV/SS (L) 42
PB (L) 43
DTS CS (H) 45
TV (H)/VCR (L) 46
ROTARY SW 50
ENVELOPE DET 48
HEAD AMP SW 49
R6108 10K 1/4W
R6035 10K
J6003
R6078 10K
S-LED_H/SCAN2 P62
SCAN1 P63
TIMER-LED_H P64 100
ENVD P65 99
HAMP P66 98
ROT P67 97
POS.1 P70 96
POS.2 P71 95
POS.3 P72 94
KEY0 P73 93
KEY1 P74 92
KEY2 P75 91
R6062 220K
R6063 15K
R6064 15K
E, H
R6085 22K
R6086 22K
R6087 22K
MODE SELECT SWITCH VSSS0159
SW6002
POSITION A
POSITION B
POSITION C
J6307
J6308
J6309
J6306
J6311
J6312
J6313
A, E

I/O CHART FOR IC6001(MN675048A5B2)

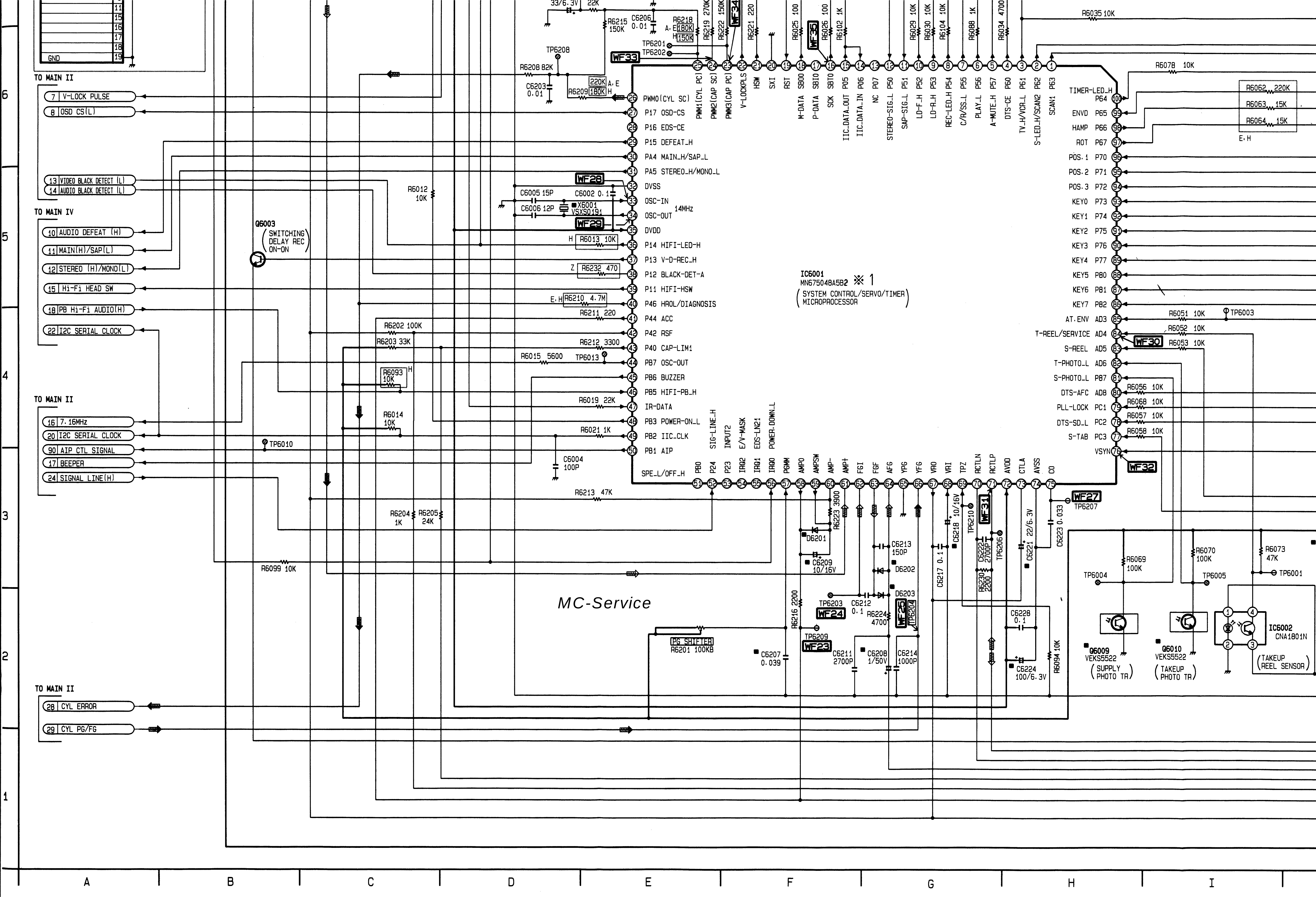
PIN NO.	I/O	FUNCTION
1	O	SCAN1
2	O	SCAN2
3	O	TV (H)/VCR (L)
4	O	DTS-CS (H)
5	O	AUDIO MUTE (H)
6	O	PB (L)
7	O	CUE/REV/SS (L)
8	O	REC LED (H)
9	O	LOADING MOTOR REVERSE (H)
10	O	LOADING MOTOR FORWARD (H)
11	I	SAP SIGNAL (L)
12	I	MTS SIGNAL (L)
13	---	(Not used)
14	I	I²C SERIAL DATA
15	O	I²C SERIAL DATA
16	O	SERIAL CLOCK
17	I	SERIAL DATA 1
18	O	SERIAL DATA O
19	I	RESET
20	---	GND
21	O	HEAD SW
22	O	V-LOCK PULSE
23	O	CAP PHASE ERROR
24	O	CAP SPEED ERROR
25	O	CAP PHASE ERROR
26	O	CAP SPEED ERROR
27	O	OSD CS (L)
28	---	(Not used)
29	O	AUDIO DEFEAT (H)
30	O	MAIN (H)/SAP (L)
31	O	STEREO (H)/MONO (L)
32	---	GND
33	I	OSC 1
34	O	OSC 2
35	---	VDD
36	O	Hi-Fi LED ON (H)
37	O	VIDEO DELAY REC (H)
38	---	(Not used)
39	O	Hi-Fi HEAD SW
40	O	H ROLL ACCELERATION
41	O	FORCED ACCELERATION
42	O	CAP REV(H)/STOP(M)/FWD(L)
43	O	CAP TORQUE LIMIT 1
44	O	7.16MHz
45	O	BEEPER
46	I	PB Hi-Fi AUDIO (H)
47	I	IR DATA
48	O	+12V POWER ON (H)
49	O	I²C SERIAL CLOCK
50	O	AIP CTL SIGNAL (Not used)

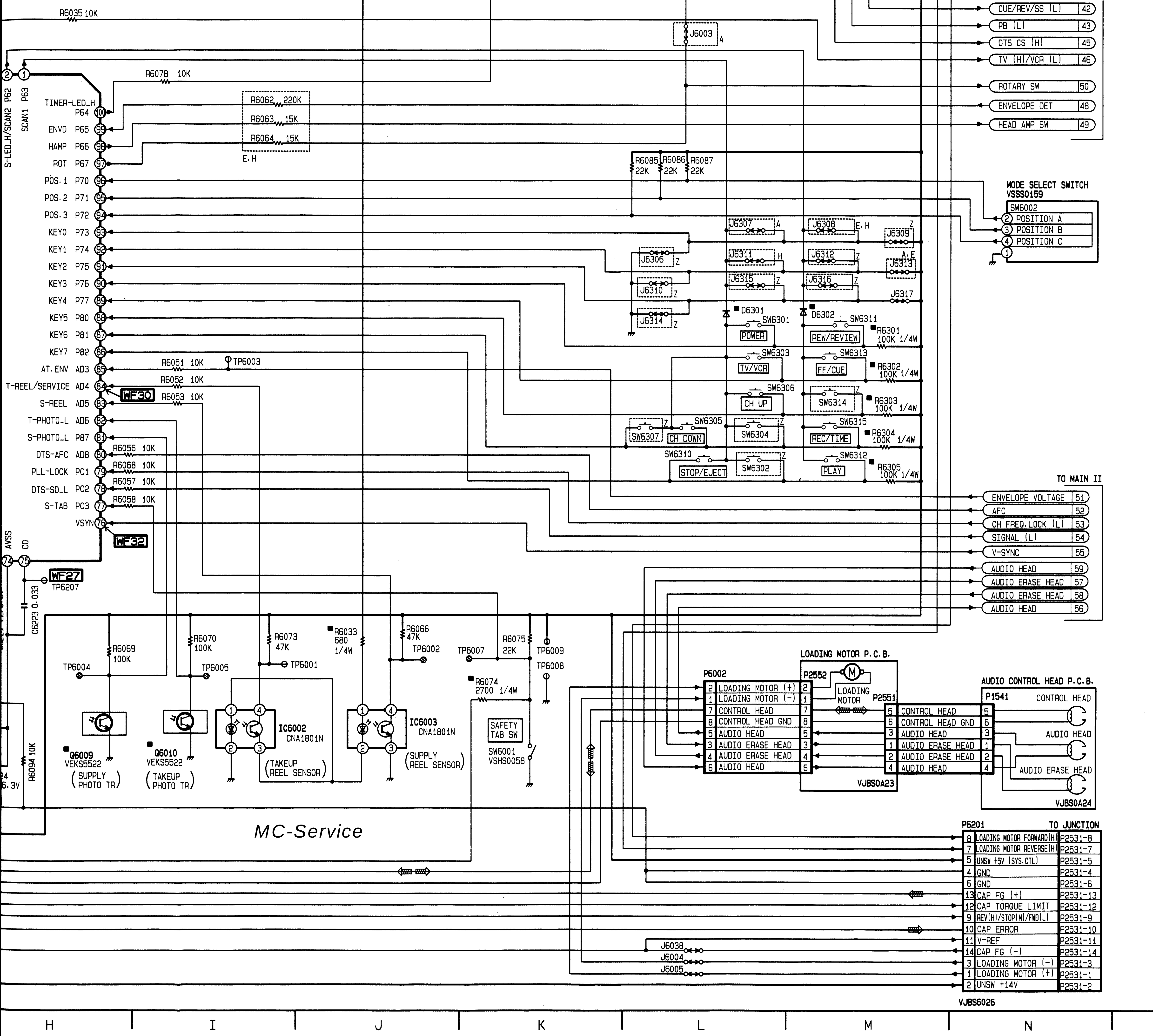
PIN NO.	I/O	FUNCTION
51	O	SPATIALIZER CTL (H/L/OFF)
52	I	SIGNAL LINE (H)
53	---	(Not used)
54	---	(Not used)
55	---	(Not used)
56	I	POWER DOWN (L)
57	I	PG SHIFTER
58	O	AMP
59	O	AMP SW
60	---	AMP -
61	I	AMP +
62	I	CAP FG
63	O	CAP FG
64	I	CAP FG
65	---	GND
66	I	CYL PG/FG
67	O	V-REF 1
68	I	V-REF 2
69	---	(Not used)
70	---	CONTROL PULSE (-)
71	---	CONTROL PULSE (+)
72	---	VDD
73	---	CTL AMP
74	---	GND
75	O	PB CTL PULSE
76	---	V-SYNC
77	I	SAFETY TAB BROKEN (H)
78	I	SIGNAL (L)
79	I	CH FREQUENCY LOCK
80	I	AFC
81	I	SUPPLY PHOTO TR (L)
82	I	TAKEUP PHOTO TR (L)
83	I	SUPPLY REEL PULSE
84	I	TAKEUP REEL PULSE/SERVICE (L)
85	I	ENVELOPE VOLTAGE
86	I	KEY DATA 7
87	I	KEY DATA 6
88	I	KEY DATA 5
89	I	KEY DATA 4
90	I	KEY DATA 3
91	I	KEY DATA 2
92	I	KEY DATA 1
93	I	KEY DATA 0
94	I	MODE SW POSITION C
95	I	MODE SW POSITION B
96	I	MODE SW POSITION A
97	O	ROTARY SW
98	O	HEAD AMP SW
99	I	ENVELOPE DET
100	O	TIMER LED ON (H)

MAIN I VOLTAGE CHART

MODE / PIN NO.	STOP	REC	PLAY	FF	REW
IC6001					
1	5.1	5.1	5.1	5.1	5.1
2	1.4	1.4	1.4	1.4	1.4
3	0.1	0.1	0.1	0.1	0.1
4	0.3	0.3	0.3	0.3	0.3
5	0.2	0.2	0.2	0.2	0.2
6	5.1	5.1	0.1	5.1	5.1
7	5.1	5.1	5.1	5.1	5.1
8	1.3	1.3	1.3	1.3	1.3
9	0	0	0	0	0
10	0	0	0	0	0
11	5.0	5.0	0.1	5.0	5.0
12	5.1	5.1	5.1	5.1	5.1
13	---	---	---	---	---
14	3.9	3.9	3.9	3.9	3.9
15	3.9	3.9	3.9	3.9	3.9
16	4.5	4.5	4.5	4.5	4.5
17	5.1	5.1	5.1	5.1	5.1
18	4.7	4.7	4.7	4.7	4.7
19	5.1	5.1	5.1	5.1	5.1
20	0	0	0	0	0
21	2.6	2.6	2.6	2.6	2.6
22	0.1	0.1	0.1	0.1	0.1
23	2.7	2.7	2.7	2.7	2.7
24	0	2.6	2.6	2.6	2.6
25	1.9	2.3	2.3	2.6	2.6
26	2.6	2.6	2.6	2.6	2.6
27	4.1	4.1	4.1	4.1	4.1
28	0	0	0	0	0
29	5.1	5.1	5.1	5.1	5.1
30	5.1	5.1	5.1	5.1	5.1
31	0	0	0	0	0
32	0	0	0	0	0
33	2.6	2.6	2.6	2.6	2.6

MODE / PIN NO.	STOP	REC	PLAY	FF	REW
95	0.1	5.2	5.2	5.2	5.2
96	5.1	0.1	0.1	0.1	0.1
97	2.6	2.6	2.6	2.6	2.6
98	0.1	0.1	0.1	0.1	0.1
99	0.2	0.2	0.2	0.2	0.2
100	5.1	5.1	5.1	5.1	5.1
IC6002					
1	1.3	1.3	1.3	1.3	1.3
2	0	0	0	0	0
3	1.3	1.3	1.3	1.3	1.3
4	---	---	---	---	---
IC6003					
1	0	0	0	0	0
2	1.3	1.3	1.3	1.3	1.3
3	0	0	0	0	0
4	---	---	---	---	---
Q1051					
E	12.0	12.0	12.0	12.0	12.0
C	13.2	13.2	13.2	13.2	13.2
B	12.6	11.6	12.6	12.6	12.6
Q1052					
E	0	0	0	0	0
C	12.6	11.6	12.6	12.6	12.6
B	0.7	0.7	0.7	0.7	0.7
Q6002					
E	12.1	12.1	12.1	12.1	12.1
C	0.5	12.1	0.5	0.5	0.5
B	12.1	11.2	12.1	12.1	12.1
Q6003					
E	0.4	1.1	0.4	0.4	0.4
C	12.1	11.2	12.1	12.1	12.1
B	0	5.0	0	0	0
Q6005					
E	5.1	5.1	5.1	5.1	5.1


GND
TO MAIN II
7 V-LOCK PULSE
8 OSD CS(L)
13 VIDEO BLACK DETECT (L)
14 AUDIO BLACK DETECT (L)
TO MAIN IV
10 AUDIO DEFEAT (H)
11 MAIN(H)/SAP(L)
12 STEREO (H)/MONO(L)
15 Hi-Fi HEAD SW
18 PB Hi-Fi AUDIO(H)
22 I2C SERIAL CLOCK
TO MAIN II
16 7.16MHz
20 I2C SERIAL CLOCK
90 AIP CTL SIGNAL
17 BEEPER
24 SIGNAL LINE(H)
TO MAIN II
28 CYL ERROR
29 CYL PG/FG
Q6003
SWITCHING DELAY REC ON-ON
TP6010
33/6.3V
22K
R6215 150K
C6206 0.01
R6218 A,E 180K H 150K
TP6208
R6208 82K
C6203 0.01
220K A,E
R6209 180K H
WF33
TP6201
TP6202
R6219 270K
R6222 150K
WF34
R6221 220
R6025 100
WF35
R6026 100
R6102 1K
R6029 10K
R6030 10K
R6104 10K
R6088 1K
R6034 4700
R6035 10K
R6078 10K
R6062 220K
R6063 15K
R6064 15K
E,H
PWM1(CYL PC)
PWM2(CAP SC)
PWM3(CAP PC)
V-LOCKPLS
HSW
SXI
RST
M-DATA SB00
P-DATA SBI0
SCK SBT0
IIC_DATA_OUT P05
IIC_DATA_IN P06
NC P07
STEREO-SIG_L P50
SAP-SIG_L P51
LD-F_H P52
LD-R_H P53
REC-LED_H P54
C/R/SS_L P55
PLAY_L P56
A-MUTE_H P57
DTS-CE P60
TV_H/VCR_L P61
S-LED_H/SCAN2 P62
SCAN1 P63
PWM0(CYL SC)
P17 OSD-CS
P16 EDS-CE
P15 DEFEAT_H
PA4 MAIN_H/SAP_L
PA5 STEREO_H/MONO_L
DVSS
OSC-IN
OSC-OUT
DVDD
P14 HIFI-LED-H
P13 V-D-REC_H
P12 BLACK-DET-A
P11 HIFI-HSW
P46 HROL/DIAGNOSIS
P44 ACC
P42 RSF
P40 CAP-LIM1
PB7 OSC-OUT
PB6 BUZZER
PB5 HIFI-PB_H
IR-DATA
PB3 POWER-ON_L
PB2 IIC_CLK
PB1 AIP
SPE_L/OFF_H
WF28
C6005 15P
C6002 0.1
C6006 12P
X6001 VSXS0191
14MHz
WF29
R6012 10K
H R6013 10K
Z R6232 470
E,H R6210 4.7M
R6211 220
R6202 100K
R6203 33K
R6212 3300
R6015 5600
TP6013
R6093 10K H
R6014 10K
R6019 22K
R6021 1K
C6004 100P
R6213 47K
IC6001
MN675048A5B2 ※1
(SYSTEM CONTROL/SERVO/TIMER MICROPROCESSOR)
TIMER-LED_H P64
ENVD P65
HAMP P66
ROT P67
POS.1 P70
POS.2 P71
POS.3 P72
KEY0 P73
KEY1 P74
KEY2 P75
KEY3 P76
KEY4 P77
KEY5 P80
KEY6 P81
KEY7 P82
AT.ENV AD3
T-REEL/SERVICE AD4
S-REEL AD5
T-PHOTO_L AD6
S-PHOTO_L P87
DTS-AFC AD8
PLL-LOCK PC1
DTS-SD_L PC2
S-TAB PC3
VSYN
R6051 10K
TP6003
R6052 10K
WF30
R6053 10K
R6056 10K
R6068 10K
R6057 10K
R6058 10K
WF32
SIG-LINE_H
INPUT2
E/V-MASK
EDS-LN21
POWER.DOWN_L
PB0
P24
P23
IRQ2
IRQ1
IRQ0
PGMM
AMPO
AMPSW
AMP-
AMP+
FGI
FGF
AFG
YPG
YFG
VRO
VRI
TPZ
RCTLN
RCTLP
AVDD
CTLA
AVSS
CO
WF27
TP6207
R6223 3900
D6201
C6209 10/16V
C6213 150P
D6202
D6203
C6212 0.1
TP6203
WF24
R6224 4700
WF25
TP6204
R6216 2200
TP6209
WF23
C6207 0.039
C6211 2700P
C6208 1/50V
C6214 1000P
C6217 0.1
C6218 10/16V
TP6210
WF31
C6222 2700P
TP6206
R6230 2200
C6221 22/6.3V
C6223 0.033
C6228 0.1
C6224 100/6.3V
R6094 10K
R6204 1K
R6205 24K
R6099 10K
PG SHIFTER
R6201 100KB
R6069 100K
TP6004
Q6009 VEKS5522
(SUPPLY PHOTO TR)
R6070 100K
TP6005
Q6010 VEKS5522
(TAKEUP PHOTO TR)
R6073 47K
TP6001
IC6002 CNA1801N
(TAKEUP REEL SENSOR)
1
2
3
4
5
6
A
B
C
D
E
F
G
H
I


R6035 10K
R6078 10K
TIMER-LED_H P64 100
ENVD P65 99
HAMP P66 98
ROT P67 97
POS.1 P70 96
POS.2 P71 95
POS.3 P72 94
KEY0 P73 93
KEY1 P74 92
KEY2 P75 91
KEY3 P76 90
KEY4 P77 89
KEY5 P80 88
KEY6 P81 87
KEY7 P82 86
AT.ENV AD3 85
T-REEL/SERVICE AD4 84
S-REEL AD5 83
T-PHOTO_L AD6 82
S-PHOTO_L P87 81
DTS-AFC AD8 80
PLL-LOCK PC1 79
DTS-SD_L PC2 78
S-TAB PC3 77
VSYN 76
AVSS 74
CO 75
S-LED_H/SCAN2 P62
SCAN1 P63
WF30
WF32
WF27
TP6207
C6223 0.033
R6062 220K
R6063 15K
R6064 15K
E,H
R6085 22K
R6086 22K
R6087 22K
J6003 A
R6051 10K
R6052 10K
R6053 10K
TP6003
R6056 10K
R6068 10K
R6057 10K
R6058 10K
J6307 A
J6308 E,H
J6309 Z
J6306 Z
J6311 H
J6312 Z
J6313 A,E
J6310 Z
J6315 Z
J6316 Z
J6317
J6314 Z
D6301
D6302
SW6301 POWER
SW6311 REW/REVIEW
R6301 100K 1/4W
SW6303 TV/VCR
SW6313 FF/CUE
R6302 100K 1/4W
SW6306 CH UP
SW6314
R6303 100K 1/4W
SW6307 Z
SW6305 CH DOWN
SW6304 Z
SW6315 REC/TIME
R6304 100K 1/4W
SW6310 STOP/EJECT
SW6302 Z
SW6312 PLAY
R6305 100K 1/4W
CUE/REV/SS (L) 42
PB (L) 43
DTS CS (H) 45
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ENVELOPE DET 48
HEAD AMP SW 49
MODE SELECT SWITCH VSSS0159
SW6002
2 POSITION A
3 POSITION B
4 POSITION C
1
TO MAIN II
ENVELOPE VOLTAGE 51
AFC 52
CH FREQ.LOCK (L) 53
SIGNAL (L) 54
V-SYNC 55
AUDIO HEAD 59
AUDIO ERASE HEAD 57
AUDIO ERASE HEAD 58
AUDIO HEAD 56
R6069 100K
R6070 100K
R6073 47K
R6033 680 1/4W
R6066 47K
R6075 22K
TP6004
TP6005
TP6001
TP6002
TP6007
TP6009
TP6008
R6074 2700 1/4W
Q6009 VEKS5522 (SUPPLY PHOTO TR)
Q6010 VEKS5522 (TAKEUP PHOTO TR)
IC6002 CNA1801N (TAKEUP REEL SENSOR)
IC6003 CNA1801N (SUPPLY REEL SENSOR)
SAFETY TAB SW
SW6001 VSHS0058
R6094 10K
24
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P2552
LOADING MOTOR
P2551
VJBS0A23
P6002
2 LOADING MOTOR (+) 2
1 LOADING MOTOR (-) 1
7 CONTROL HEAD 7
8 CONTROL HEAD GND 8
5 AUDIO HEAD 5
3 AUDIO ERASE HEAD 3
4 AUDIO ERASE HEAD 4
6 AUDIO HEAD 6
5 CONTROL HEAD 5
6 CONTROL HEAD GND 6
3 AUDIO HEAD 3
1 AUDIO ERASE HEAD 1
2 AUDIO ERASE HEAD 2
4 AUDIO HEAD 4
AUDIO CONTROL HEAD P.C.B.
P1541
CONTROL HEAD
AUDIO HEAD
AUDIO ERASE HEAD
VJBS0A24
P6201
TO JUNCTION
8 LOADING MOTOR FORWARD(H) P2531-8
7 LOADING MOTOR REVERSE(H) P2531-7
5 UNSW +5V (SYS.CTL) P2531-5
4 GND P2531-4
6 GND P2531-6
13 CAP FG (+) P2531-13
12 CAP TORQUE LIMIT P2531-12
9 REV(H)/STOP(M)/FWD(L) P2531-9
10 CAP ERROR P2531-10
11 V-REF P2531-11
14 CAP FG (-) P2531-14
3 LOADING MOTOR (-) P2531-3
1 LOADING MOTOR (+) P2531-1
2 UNSW +14V P2531-2
VJBS6026
J6038
J6004
J6005
H
I
J
K
L
M
N
O
P

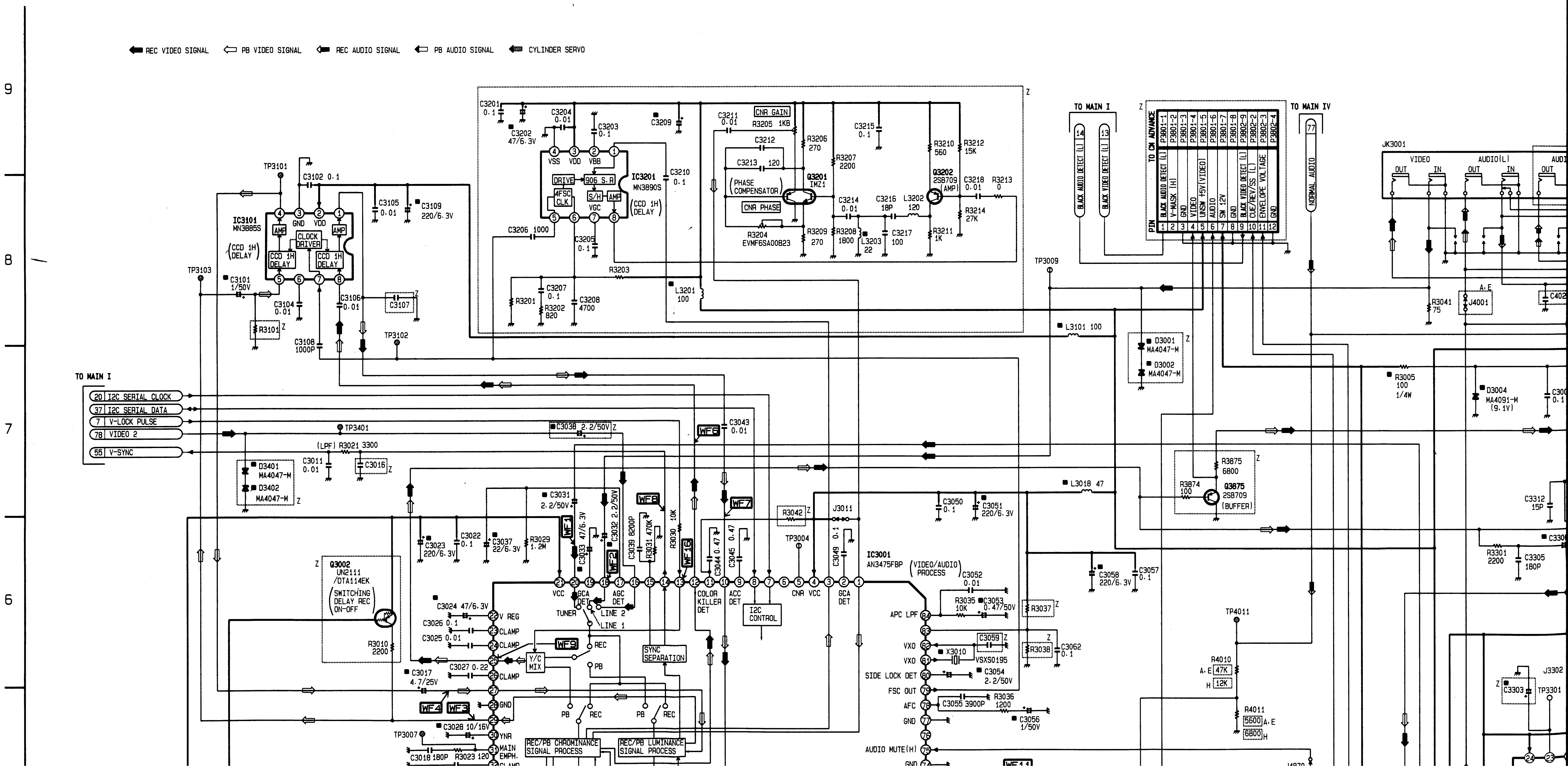
6	5.1	5.1	0.1	5.1	5.1
7	5.1	5.1	5.1	5.1	5.1
8	1.3	1.3	1.3	1.3	1.3
9	0	0	0	0	0
10	0	0	0	0	0
11	5.0	5.0	0.1	5.0	5.0
12	5.1	5.1	5.1	5.1	5.1
13	---	---	---	---	---
14	3.9	3.9	3.9	3.9	3.9
15	3.9	3.9	3.9	3.9	3.9
16	4.5	4.5	4.5	4.5	4.5
17	5.1	5.1	5.1	5.1	5.1
18	4.7	4.7	4.7	4.7	4.7
19	5.1	5.1	5.1	5.1	5.1
20	0	0	0	0	0
21	2.6	2.6	2.6	2.6	2.6
22	0.1	0.1	0.1	0.1	0.1
23	2.7	2.7	2.7	2.7	2.7
24	0	2.6	2.6	2.6	2.6
25	1.9	2.3	2.3	2.6	2.6
26	2.6	2.6	2.6	2.6	2.6
27	4.1	4.1	4.1	4.1	4.1
28	0	0	0	0	0
29	5.1	5.1	5.1	5.1	5.1
30	5.1	5.1	5.1	5.1	5.1
31	0	0	0	0	0
32	0	0	0	0	0
33	2.6	2.6	2.6	2.6	2.6
34	2.6	2.6	2.6	2.6	2.6
35	5.1	5.1	5.1	5.1	5.1
36	5.1	5.1	5.1	5.1	5.1
37	0	5.1	0	0	0
38	---	---	---	---	---
39	4.5	4.5	5.2	4.5	4.5
40	2.2	2.2	2.2	2.2	2.2
41	1.1	2.4	2.4	2.4	2.4
42	2.6	0.1	0.1	0.1	5.0
43	5.0	5.0	5.0	5.0	5.0
44	2.6	2.6	2.6	2.6	2.6
45	---	---	---	---	---
46	5.1	5.1	5.1	5.1	5.1
47	5.0	5.0	5.0	5.0	5.0
48	0	0	0	0	0
49	4.1	4.1	4.1	4.1	4.1
50	5.1	5.1	4.5	5.1	5.1
51	---	---	---	---	---
52	5.1	5.1	5.1	5.1	5.1
53	---	---	---	---	---
54	---	---	---	---	---
55	---	---	---	---	---
56	5.2	5.2	5.2	5.2	5.2
57	3.0	3.0	3.0	3.0	3.0
58	2.4	2.4	2.4	2.4	2.4
59	2.6	2.6	2.6	2.6	2.6
60	2.6	2.6	2.6	2.6	2.6
61	2.6	2.6	2.6	2.6	2.6
62	2.6	2.6	2.6	2.6	2.6
63	2.6	2.6	2.6	2.6	2.6
64	2.6	2.6	2.6	2.6	2.6
65	0	0	0	0	0
66	1.2	1.2	1.2	1.2	1.2
67	2.6	2.6	2.6	2.6	2.6
68	2.6	2.6	2.6	2.6	2.6
69	0	0	0	0	0
70	2.6	2.6	2.6	2.6	2.6
71	2.6	2.6	0	2.6	2.6
72	5.1	5.1	5.1	5.1	5.1
73	2.6	2.6	2.6	2.6	2.6
74	0	0	0	0	0
75	2.6	2.6	2.6	2.6	2.6
76	0.5	0.5	0.5	0.5	0.5
77	0	0	0	0	0
78	5.1	5.1	5.1	5.1	5.1
79	0.1	0.1	0.1	0.1	0.1
80	2.6	2.6	2.6	2.6	2.6
81	5.1	5.1	5.1	5.1	5.1
82	5.1	5.1	5.1	5.1	5.1
83	5.1	5.1	5.1	5.1	5.1
84	0.2	0.2	0.2	0.2	0.2
85	3.7	3.7	5.1	3.7	3.7
86	5.2	5.2	5.2	5.2	5.2
87	5.2	5.2	5.2	5.2	5.2
88	5.2	5.2	5.2	5.2	5.2
89	5.2	5.2	5.2	5.2	5.2
90	5.2	5.2	5.2	5.2	5.2
91	5.2	5.2	5.2	5.2	5.2
92	5.0	5.0	5.0	5.0	5.0
93	1.4	1.4	1.4	1.4	1.4
94	5.2	5.2	5.2	5.2	5.2

IC6002					
1	1.3	1.3	1.3	1.3	1.3
2	0	0	0	0	0
3	1.3	1.3	1.3	1.3	1.3
4	---	---	---	---	---
IC6003					
1	0	0	0	0	0
2	1.3	1.3	1.3	1.3	1.3
3	0	0	0	0	0
4	---	---	---	---	---
Q1051					
E	12.0	12.0	12.0	12.0	12.0
C	13.2	13.2	13.2	13.2	13.2
B	12.6	11.6	12.6	12.6	12.6
Q1052					
E	0	0	0	0	0
C	12.6	11.6	12.6	12.6	12.6
B	0.7	0.7	0.7	0.7	0.7
Q6002					
E	12.1	12.1	12.1	12.1	12.1
C	0.5	12.1	0.5	0.5	0.5
B	12.1	11.2	12.1	12.1	12.1
Q6003					
E	0.4	1.1	0.4	0.4	0.4
C	12.1	11.2	12.1	12.1	12.1
B	0	5.0	0	0	0
Q6005					
E	5.1	5.1	5.1	5.1	5.1
C	5.1	5.1	5.1	5.1	5.1
B	4.4	4.4	4.4	4.4	4.4
Q6006					
E	0	0	0	0	0
C	0	0	0	0	0
B	0.8	0.8	0.8	0.8	0.8
Q6008					
E	0	0	0	0	0
C	5.0	5.0	5.0	5.0	5.0
B	0	0	0	0	0
Q6009					
E	0	0	0	0	0
C	5.1	5.1	5.1	5.1	5.1
B	---	---	---	---	---
Q6010					
E	0	0	0	0	0
C	5.1	5.1	5.1	5.1	5.1
B	---	---	---	---	---
Q6301					
E	0	0	0	0	0
C	0	5.1	0	0	0
B	0	0	0	0	0
Q6302					
E	0	0	0	0	0
C	5.1	5.1	5.1	5.1	5.1
B	0	0	0	0	0
Q6303					
E	0	0	0	0	0
C	12.0	12.0	12.0	12.0	12.0
B	0.1	0.1	0.1	0.1	0.1
Q6304					
E	0	0	0	0	0
C	0	0	0	0	0
B	5.1	5.1	5.1	5.1	5.1
Q6390					
E	5.1	5.1	5.1	5.1	5.1
C	5.1	5.1	5.1	5.1	5.1
B	0	0	0	0	0
TP1058	12.0	12.0	12.0	12.0	12.0
TP6001	---	---	---	---	---
TP6002	0.2	0.2	0.2	0.2	0.2
TP6003	3.4	3.4	3.0	3.4	3.4
TP6004	4.9	4.9	4.9	4.9	4.9
TP6005	5.1	5.1	5.1	5.1	5.1
TP6006	4.9	4.9	4.9	4.9	4.9
TP6007	0.3	0.3	0.3	0.3	0.3
TP6008	0	0	0	0	0
TP6009	---	---	---	---	---
TP6010	0	5.1	0	0	0
TP6011	0	0	0	0	0
TP6013	0	0	0	0	0
TP6201	2.6	2.6	2.6	2.6	2.6
TP6202	2.1	2.1	2.1	2.1	2.1
TP6203	2.6	2.6	2.6	2.6	2.6
TP6204	1.2	1.2	1.2	1.2	1.2
TP6205	2.6	2.6	2.6	2.6	2.6
TP6206	0	3.0	0	0	0
TP6207	2.6	2.6	2.6	2.6	2.6
TP6208	2.5	2.5	2.5	2.5	2.5
TP6209	1.1	2.4	2.4	2.4	2.4
TP6210	0	0	0	0	0

UNLESS OTHERWISE SPECIFIED:
PNP TRANSISTORS IS
2SB709(R,S).
NPN TRANSISTORS IS
2SD601(R,S).
DIODES IS MA165.
SWITCHES IS EVQ21309K AND
WATTAGE OF RESISTORS IS 1/10W.

MAIN II (SIGNAL PROCESS/AUDIO) SCHEMATIC DIAGRAM (A,E,H)

NOTE:
FOR SCHEMATIC DIAGRAM
REFER TO BEGINNING OF


REC VIDEO SIGNAL
PB VIDEO SIGNAL
REC AUDIO SIGNAL
PB AUDIO SIGNAL
CYLINDER SERVO
9
8
7
6
TP3101
TP3103
TP3102
IC3101 MN3885S
(CCD 1H DELAY)
AMP
GND
VDD
CLOCK DRIVER
CCD 1H DELAY
C3101 1/50V
C3102 0.1
C3104 0.01
C3105 0.01
C3106 0.01
C3107
C3108 1000P
C3109 220/6.3V
R3101
IC3201 MN3890S
(CCD 1H DELAY)
VSS
VDD
VBB
DRIVE
906 S.R
4FSC CLK
S/H
AMP
VGC
C3201 0.1
C3202 47/6.3V
C3203 0.1
C3204 0.01
C3205 0.1
C3206 1000
C3207 0.1
C3208 4700
C3209
C3210 0.1
R3201
R3202 820
R3203
L3201 100
C3211 0.01
CNR GAIN
R3205 1KB
C3212
C3213 120
(PHASE COMPENSATOR)
CNR PHASE
R3204 EVMF6SA00B23
R3206 270
R3207 2200
Q3201 IMZ1
R3209 270
R3208 1800
C3214 0.01
C3215 0.1
C3216 18P
L3202 120
L3203 22
C3217 100
R3210 560
R3211 1K
R3212 15K
Q3202 2SB709 (AMP)
C3218 0.01
R3213 0
R3214 27K
TP3009
L3101 100
TO MAIN I
14
13
BLACK AUDIO DETECT (L)
BLACK VIDEO DETECT (L)
TO CM ADVANCE
PIN
P3801-1 BLACK AUDIO DETECT (L)
P3801-2 V-MASK (H)
P3801-3 GND
P3801-4 VIDEO
P3801-5 UNSW +5V(VIDEO)
P3801-6 AUDIO
P3801-7 SW 12V
P3801-8 GND
P3802-9 BLACK VIDEO DETECT (L)
P3802-2 CUE/REV/SS (L)
P3802-3 ENVELOPE VOLTAGE
P3802-4 GND
TO MAIN IV
77
NORMAL AUDIO
JK3001
VIDEO
AUDIO(L)
OUT
IN
R3041 75
J4001
A.E
D3001 MA4047-M
D3002 MA4047-M
R3005 100 1/4W
D3004 MA4091-M (9.1V)
R3875 6800
R3874 100
Q3875 2SB709 (BUFFER)
L3018 47
C3312 15P
R3301 2200
C3305 180P
TO MAIN I
20 I2C SERIAL CLOCK
37 I2C SERIAL DATA
7 V-LOCK PULSE
78 VIDEO 2
55 V-SYNC
TP3401
(LPF) R3021 3300
C3011 0.01
C3016
D3401 MA4047-M
D3402 MA4047-M
Q3002 UN2111 /DTA114EK
(SWITCHING DELAY REC ON-OFF)
R3010 2200
C3038 2.2/50V
C3043 0.01
WF6
WF8
WF7
WF1
WF2
WF16
WF9
WF4
WF3
C3023 220/6.3V
C3022 0.1
C3037 22/6.3V
R3029 1.2M
C3031 2.2/50V
C3033 47/6.3V
C3032 2.2/50V
C3039 8200P
R3031 470K
R3030 10K
C3044 0.47
C3045 0.47
R3042
J3011
TP3004
C3049 0.1
C3050 0.1
C3051 220/6.3V
IC3001 AN3475FBP (VIDEO/AUDIO PROCESS)
C3052 0.01
VCC
GCA DET
AGC DET
TUNER
LINE 2
LINE 1
COLOR KILLER DET
ACC DET
I2C CONTROL
CNR VCC
GCA DET
SYNC SEPARATION
C3024 47/6.3V
C3026 0.1
C3025 0.01
V REG
CLAMP
Y/C MIX
REC
PB
C3017 4.7/25V
C3027 0.22
GND
TP3007
C3028 10/16V
YNR
C3018 180P
R3023 120
MAIN EMPH.
REC/PB CHROMINANCE SIGNAL PROCESS
REC/PB LUMINANCE SIGNAL PROCESS
APC LPF
VXO
SIDE LOCK DET
FSC OUT
AFC
AUDIO MUTE(H)
R3035 10K
C3053 0.47/50V
R3037
C3059
X3010 VSX50195
C3054 2.2/50V
R3036 1200
C3055 3900P
C3056 1/50V
R3038
C3062 0.1
C3058 220/6.3V
C3057 0.1
TP4011
R4010
A.E 47K
H 12K
R4011
5600 A.E
6800 H
J3302
C3303
TP3301
Z

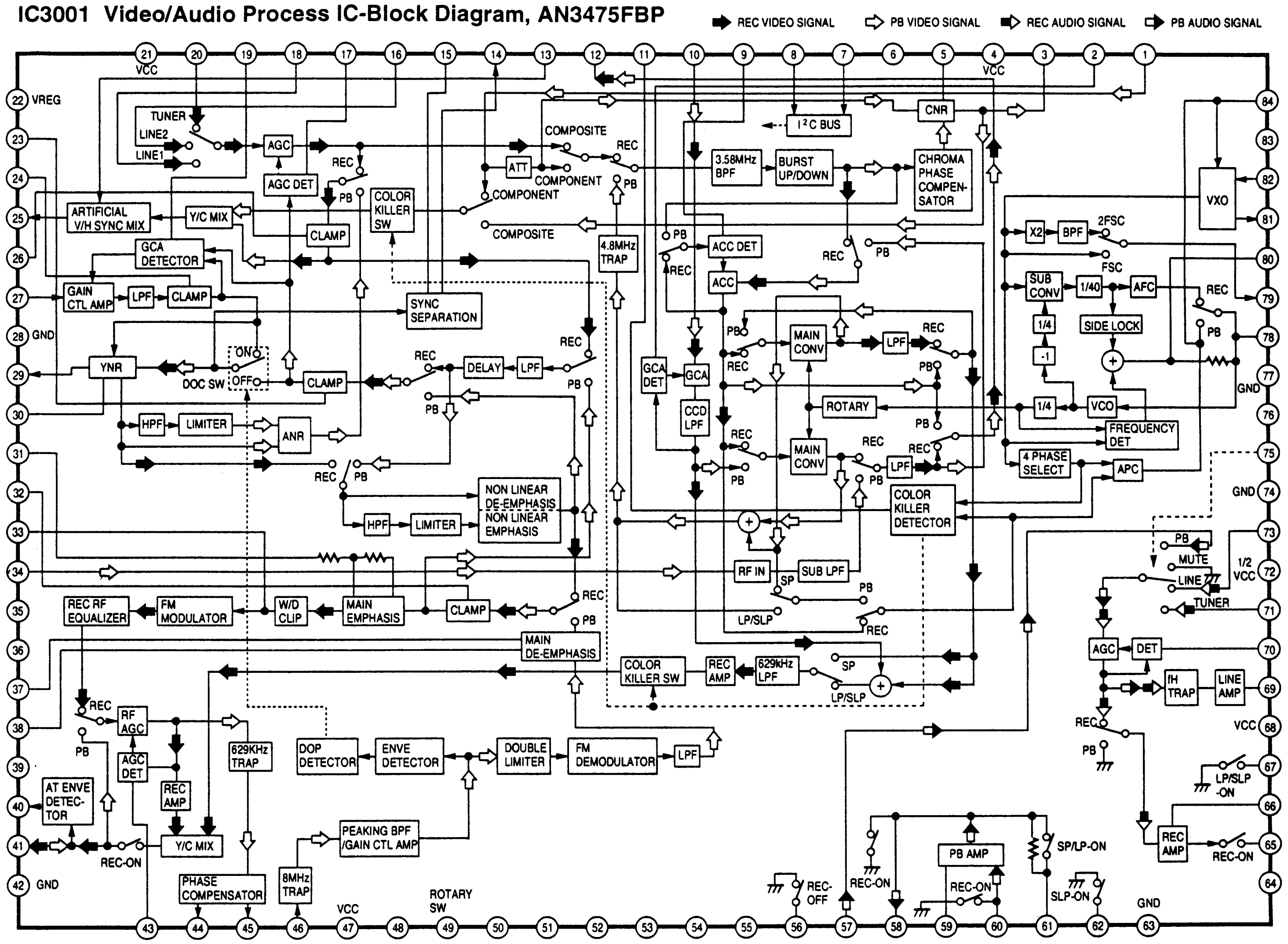
NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES, REFER TO BEGINNING OF SCHEMATIC SECTION.

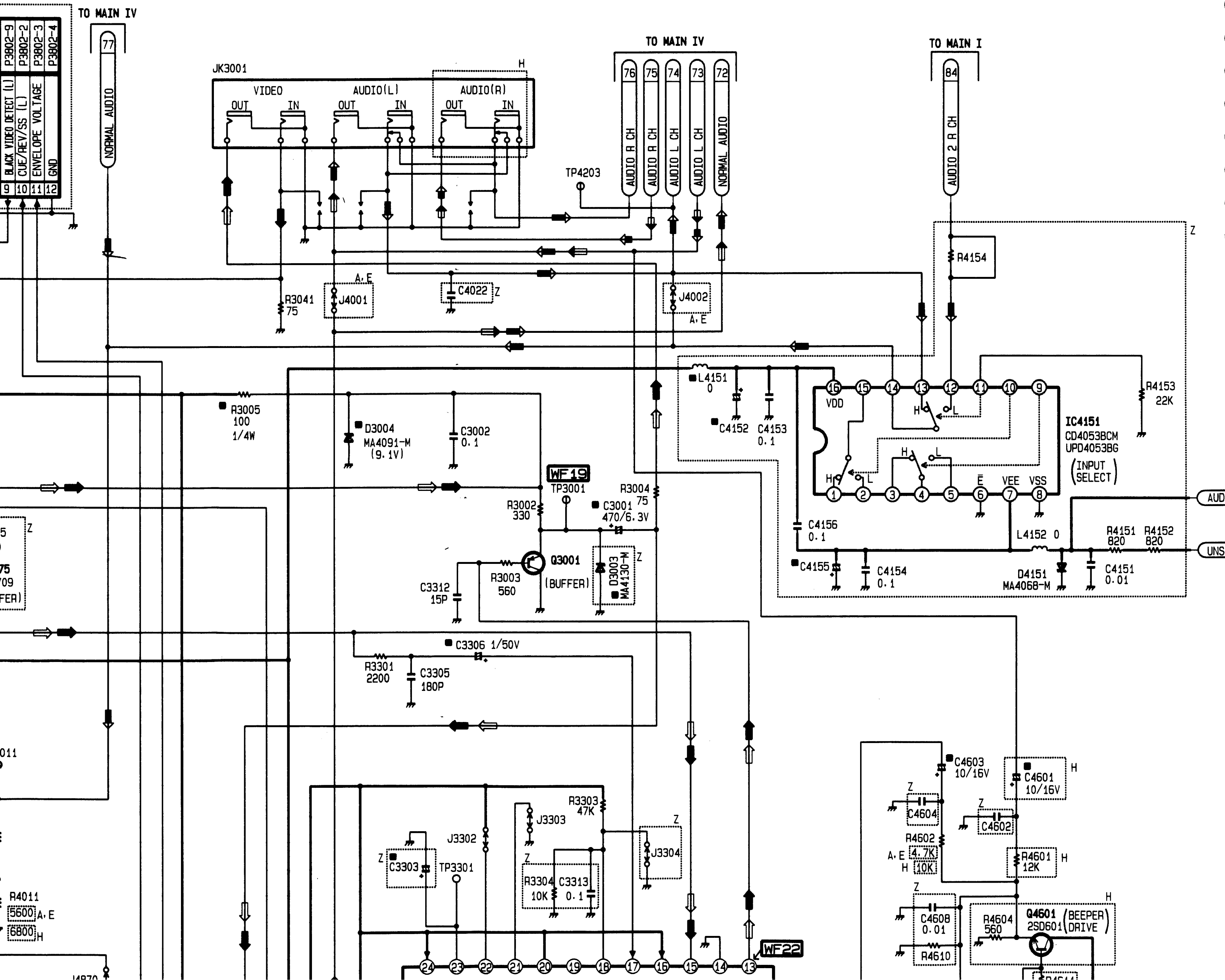
COMPARISON CHART OF MODELS & MARKS

MODEL	MARK
VHQ720	A
PV-7400	B
PV-7401	C
PV-7401-K	D
VHQ740	E
PV-7450	F
PV-7451	G
VHQ760	H
Not Used	Z

MC-Service

IC3001 Video/Audio Process IC-Block Diagram, AN3475FBP


REC VIDEO SIGNAL
PB VIDEO SIGNAL
REC AUDIO SIGNAL
PB AUDIO SIGNAL
VCC
VREG
GND
TUNER
LINE2
LINE1
AGC
AGC DET
COMPOSITE
ATT
COMPONENT
REC
PB
I²C BUS
CNR
3.58MHz BPF
BURST UP/DOWN
CHROMA PHASE COMPEN-SATOR
VXO
ARTIFICIAL V/H SYNC MIX
Y/C MIX
COLOR KILLER SW
CLAMP
GCA DETECTOR
4.8MHz TRAP
ACC DET
ACC
X2
BPF
2FSC
FSC
SUB CONV
1/40
AFC
GAIN CTL AMP
LPF
SYNC SEPARATION
MAIN CONV
1/4
-1
SIDE LOCK
YNR
DOC SW
ON
OFF
DELAY
GCA DET
GCA
ROTARY
VCO
HPF
LIMITER
ANR
CCD LPF
FREQUENCY DET
4 PHASE SELECT
APC
NON LINEAR DE-EMPHASIS
NON LINEAR EMPHASIS
COLOR KILLER DETECTOR
RF IN
SP
SUB LPF
MUTE
1/2 VCC
REC RF EQUALIZER
FM MODULATOR
W/D CLIP
MAIN EMPHASIS
MAIN DE-EMPHASIS
LP/SLP
COLOR KILLER SW
REC AMP
629KHz LPF
AGC
DET
fH TRAP
LINE AMP
RF AGC
AGC DET
REC AMP
629KHz TRAP
DOP DETECTOR
ENVE DETECTOR
DOUBLE LIMITER
FM DEMODULATOR
LP/SLP -ON
AT ENVE DETEC-TOR
Y/C MIX
PEAKING BPF /GAIN CTL AMP
REC-ON
PHASE COMPENSATOR
8MHz TRAP
ROTARY SW
REC-OFF
PB AMP
SP/LP-ON
SLP-ON
REC AMP


TO MAIN IV
77
NORMAL AUDIO
P3802-9
P3802-2
P3802-3
P3802-4
BLACK VIDEO DETECT (L)
CUE/REV/SS (L)
ENVELOPE VOLTAGE
GND
9 10 11 12
JK3001
VIDEO
AUDIO(L)
AUDIO(R)
OUT IN
H
TO MAIN IV
76 75 74 73 72
AUDIO R CH
AUDIO R CH
AUDIO L CH
AUDIO L CH
NORMAL AUDIO
TO MAIN I
84
AUDIO 2 R CH
TP4203
R3041 75
A, E
J4001
C4022
J4002
R4154
R4153 22K
L4151 0
C4152
C4153 0.1
IC4151
CD4053BCM
UPD4053BG
(INPUT SELECT)
VDD
VEE VSS
C4156 0.1
C4155
C4154 0.1
L4152 0
D4151 MA4068-M
R4151 820
R4152 820
C4151 0.01
R3005 100 1/4W
D3004 MA4091-M (9.1V)
C3002 0.1
WF19
TP3001
R3004 75
R3002 330
C3001 470/6.3V
Q3001 (BUFFER)
D3003 MA4130-M
C3312 15P
R3003 560
C3306 1/50V
R3301 2200
C3305 180P
R3303 47K
J3303
J3302
C3303
TP3301
R3304 10K
C3313 0.1
J3304
WF22
R4011
5600 A, E
6800 H
C4603 10/16V
C4601 10/16V
C4604
C4602
R4602 A, E 4.7K H 10K
R4601 12K
C4608 0.01
R4604 560
Q4601 2SD601 (BEEPER DRIVE)
R4610
Z

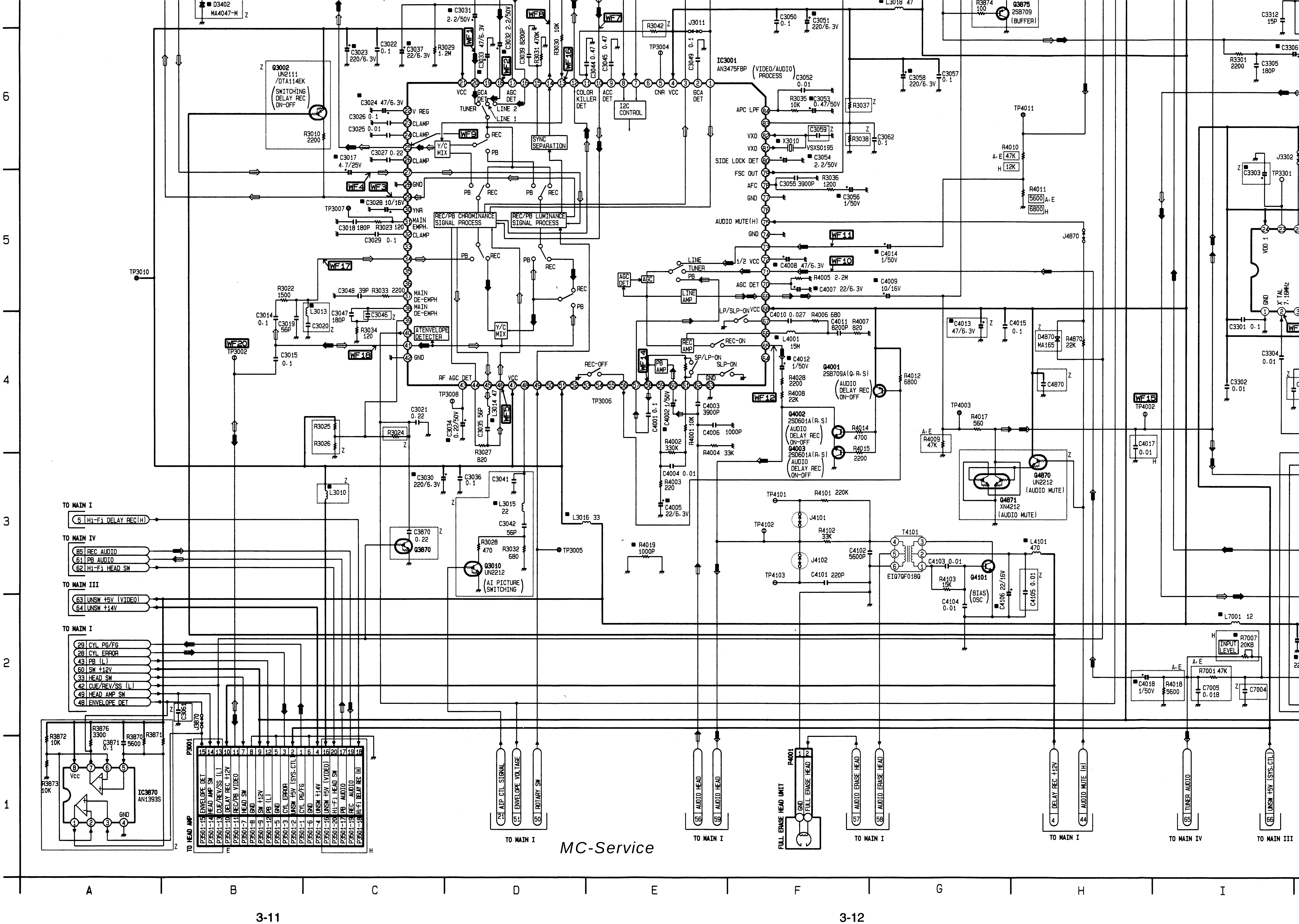
TO MAIN I
AUDIO -5V 21

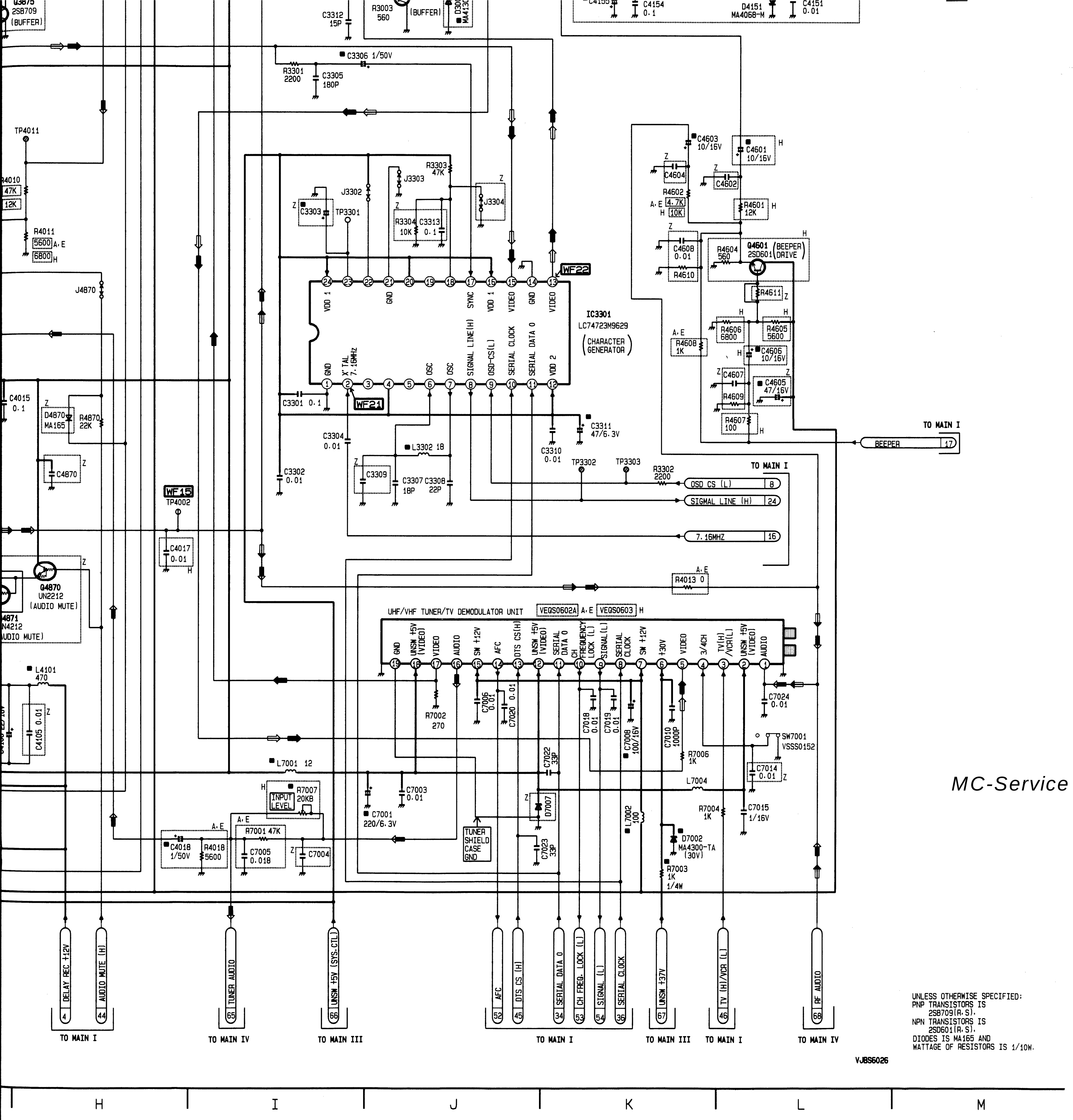
TO MAIN III
UNSW -30V 23

MAIN II VOLTAGE CHART

MODE / PIN NO.	REC	PLAY
IC3001		
1	5.1	5.1
2	3.3	3.3
3	2.1	2.1
4	5.1	5.1
5	4.3	4.3
6	---	---
7	4.2	4.2
8	4.0	4.0
9	2.2	2.2
10	2.8	2.8
11	0.8	0.8
12	2.8	2.8
13	0.4	0.4
14	0.5	0.5
15	1.0	1.0
16	3.1	3.9
17	2.3	1.8
18	3.1	3.1
19	2.6	2.6
20	3.1	3.4
21	5.1	5.1
22	2.0	2.0
23	2.5	2.5
24	2.4	2.4
25	2.0	2.0
26	2.5	2.5
27	2.0	2.0
28	0	0
29	1.9	1.9
30	0	0
31	2.0	2.4
32	2.4	2.4
33	2.0	1.2

MODE / PIN NO.	REC	PLAY
IC3301		
1	0	0
2	2.8	2.8
3	---	---
4	5.1	5.1
5	2.9	3.4
6	2.6	2.6
7	2.6	2.6
8	5.1	5.1
9	4.1	4.1
10	4.5	4.5
11	4.4	4.4
12	5.1	5.1
13	2.0	2.0
14	0	0
15	2.0	2.0
16	5.1	5.1
17	2.9	2.9
18	2.1	2.1
19	---	---
20	5.1	5.1
21	0	0
22	5.1	5.1
23	---	---
24	5.1	5.1
Q3001		
E	2.8	2.8
C	0	0
B	2.0	2.0
Q4001		
E	5.1	5.1
C	-18.7	5.1
B	5.1	4.4


IC3001
AN3475FBP
(VIDEO/AUDIO PROCESS)
Q3002
UN2111 /DTA114EK
(SWITCHING DELAY REC ON-OFF)
R3010 2200
D3402 MA4047-M
WF1
WF2
WF3
WF4
WF5
WF6
WF7
WF9
WF10
WF11
WF12
WF14
WF15
WF16
WF17
WF18
WF20
TP3010
TP3002
TP3007
TP3008
TP3006
TP3005
TP3004
J3011
VCC
GCA DET
AGC DET
TUNER
LINE 2
LINE 1
V REG
CLAMP
REC
PB
Y/C MIX
SYNC SEPARATION
COLOR KILLER DET
ACC DET
I2C CONTROL
CNR VCC
GCA DET
APC LPF
VXO
SIDE LOCK DET
FSC OUT
AFC
GND
AUDIO MUTE(H)
1/2 VCC
AGC DET
LP/SLP-ON
REC-ON
SP/LP-ON
SLP-ON
REC-OFF
RF AGC DET
YNR
MAIN EMPH.
REC/PB CHROMINANCE SIGNAL PROCESS
REC/PB LUMINANCE SIGNAL PROCESS
MAIN DE-EMPH
ATENVELOPE DETECTER
LINE AMP
REC AMP
PB AMP
X3010 VSXS0195
Q4001 2SB709A(Q.R.S) (AUDIO DELAY REC ON-OFF)
Q4002 2SD601A(R.S) (AUDIO DELAY REC ON-OFF)
Q4003 2SD601A(R.S) (AUDIO DELAY REC ON-OFF)
Q4870 UN2212 (AUDIO MUTE)
Q4871 XN4212 (AUDIO MUTE)
Q3870
Q3010 UN2212 (AI PICTURE SWITCHING)
Q3875 2SB709 (BUFFER)
Q4101 (BIAS OSC)
T4101 EIQ7QF018Q
J4101
J4102
TP4101
TP4102
TP4103
TP4003
TP4002
TP4011
J4870
D4870 MA165
IC3870 AN1393S
TO MAIN I
5 Hi-Fi DELAY REC(H)
TO MAIN IV
85 REC AUDIO
61 PB AUDIO
62 Hi-Fi HEAD SW
TO MAIN III
63 UNSW +5V (VIDEO)
64 UNSW +14V
TO MAIN I
29 CYL PG/FG
28 CYL ERROR
43 PB (L)
60 SW +12V
33 HEAD SW
42 CUE/REV/SS (L)
49 HEAD AMP SW
48 ENVELOPE DET
P3001
TO HEAD AMP
P3501-15 ENVELOPE DET
P3501-14 HEAD AMP SW
P3501-13 CUE/REV/SS (L)
P3501-10 DELAY REC +12V
P3501-11 REC/PB VIDEO
P3501-7 HEAD SW
P3501-8 GND
P3501-9 SW +12V
P3501-12 PB (L)
P3501-5 CYL ERROR
P3501-2 UNSW +5V (SYS.CTL)
P3501-1 CYL PG/FG
P3501-6 GND
P3501-4 UNSW +14V
P3501-16 UNSW +5V (VIDEO)
P3501-20 Hi-Fi HEAD SW
P3501-17 PB AUDIO
P3501-19 REC AUDIO
P3501-18 Hi-Fi DELAY REC(H)
21 AIP CTL SIGNAL
51 ENVELOPE VOLTAGE
50 ROTARY SW
TO MAIN I
56 AUDIO HEAD
59 AUDIO HEAD
TO MAIN I
P4001
FULL ERASE HEAD UNIT
GND
FULL ERASE HEAD
57 AUDIO ERASE HEAD
58 AUDIO ERASE HEAD
TO MAIN I
4 DELAY REC +12V
44 AUDIO MUTE (H)
TO MAIN I
65 TUNER AUDIO
TO MAIN IV
66 UNSW +5V (SYS.CTL)
TO MAIN III
INPUT LEVEL
R7002 20KB
R7001 47K
J3302
TP3301
X'TAL 7.16MHz
VDD
1
2
3
4
5
6
A
B
C
D
E
F
G
H
I


IC3301
LC74723M9629
(CHARACTER GENERATOR)
VDD 1
GND
SYNC
VIDEO
X'TAL 7.16MHz
OSC
SIGNAL LINE(H)
OSD-CS(L)
SERIAL CLOCK
SERIAL DATA 0
VDD 2
WF21
WF22
WF15
TP4002
TP4011
TP3301
TP3302
TP3303
J3302
J3303
J3304
J4870
Q4601 (BEEPER DRIVE) 2SD601
Q4870 UN2212 (AUDIO MUTE)
D4870 MA165
L4101 470
L3302 18
L7001 12
L7004
INPUT LEVEL
R7007 20KB
TUNER SHIELD CASE GND
UHF/VHF TUNER/TV DEMODULATOR UNIT VEQS0602A A.E VEQS0603 H
SW7001 VSSS0152
D7002 MA4300-TA (30V)
R7003 1K 1/4W
BEEPER 17
OSD CS (L) 8
SIGNAL LINE (H) 24
7.16MHZ 16
TO MAIN I
DELAY REC +12V 4
AUDIO MUTE (H) 44
TO MAIN I
TUNER AUDIO 65
TO MAIN IV
UNSW +5V (SYS.CTL) 66
TO MAIN III
AFC 52
DTS CS (H) 45
SERIAL DATA 0 34
CH FREQ. LOCK (L) 53
SIGNAL (L) 54
SERIAL CLOCK 36
TO MAIN I
UNSW +37V 67
TO MAIN III
TV (H)/VCR (L) 46
TO MAIN I
RF AUDIO 68
TO MAIN IV
VJBS6026
H
I
J
K
L
M

UNLESS OTHERWISE SPECIFIED:
PNP TRANSISTORS IS
2SB709(R,S).
NPN TRANSISTORS IS
2SD601(R,S).
DIODES IS MA165 AND
WATTAGE OF RESISTORS IS 1/10W.

10	2.8	2.8
11	0.8	0.8
12	2.8	2.8
13	0.4	0.4
14	0.5	0.5
15	1.0	1.0
16	3.1	3.9
17	2.3	1.8
18	3.1	3.1
19	2.6	2.6
20	3.1	3.4
21	5.1	5.1
22	2.0	2.0
23	2.5	2.5
24	2.4	2.4
25	2.0	2.0
26	2.5	2.5
27	2.0	2.0
28	0	0
29	1.9	1.9
30	0	0
31	2.0	2.4
32	2.4	2.4
33	2.0	1.2
34	3.0	2.8
35	2.6	2.6
36	---	---
37	0	1.5
38	4.6	2.2
39	2.4	2.0
40	3.8	5.1
41	2.8	3.6
42	0	0
43	3.4	3.4
44	2.6	2.6
45	2.6	2.6
46	2.6	2.6
47	5.1	5.1
48	1.2	1.0
49	2.6	2.6
50	---	---
51	5.1	5.1
52	---	---
53	---	---
54	---	---
55	---	---
56	5.1	0
57	0.8	2.6
58	2.6	2.6
59	2.6	2.6
60	2.6	2.6
61	2.6	2.6
62	0	0
63	0	0
64	---	---
65	2.6	2.6
66	2.6	2.6
67	2.6	2.6
68	5.1	5.1
69	2.7	2.7
70	0	0
71	2.6	2.6
72	2.6	2.6
73	2.6	2.6
74	0	0
75	0	0
76	---	---
77	0	0
78	2.1	2.1
79	3.0	3.0
80	2.1	2.1
81	2.5	2.5
82	2.8	2.8
83	2.6	2.6
84	2.5	2.5
IC3101		
1	3.4	3.4
2	5.1	5.1
3	0	0
4	3.2	3.2
5	2.9	3.4
6	-2.7	-2.7
7	2.1	2.1
8	3.0	3.0

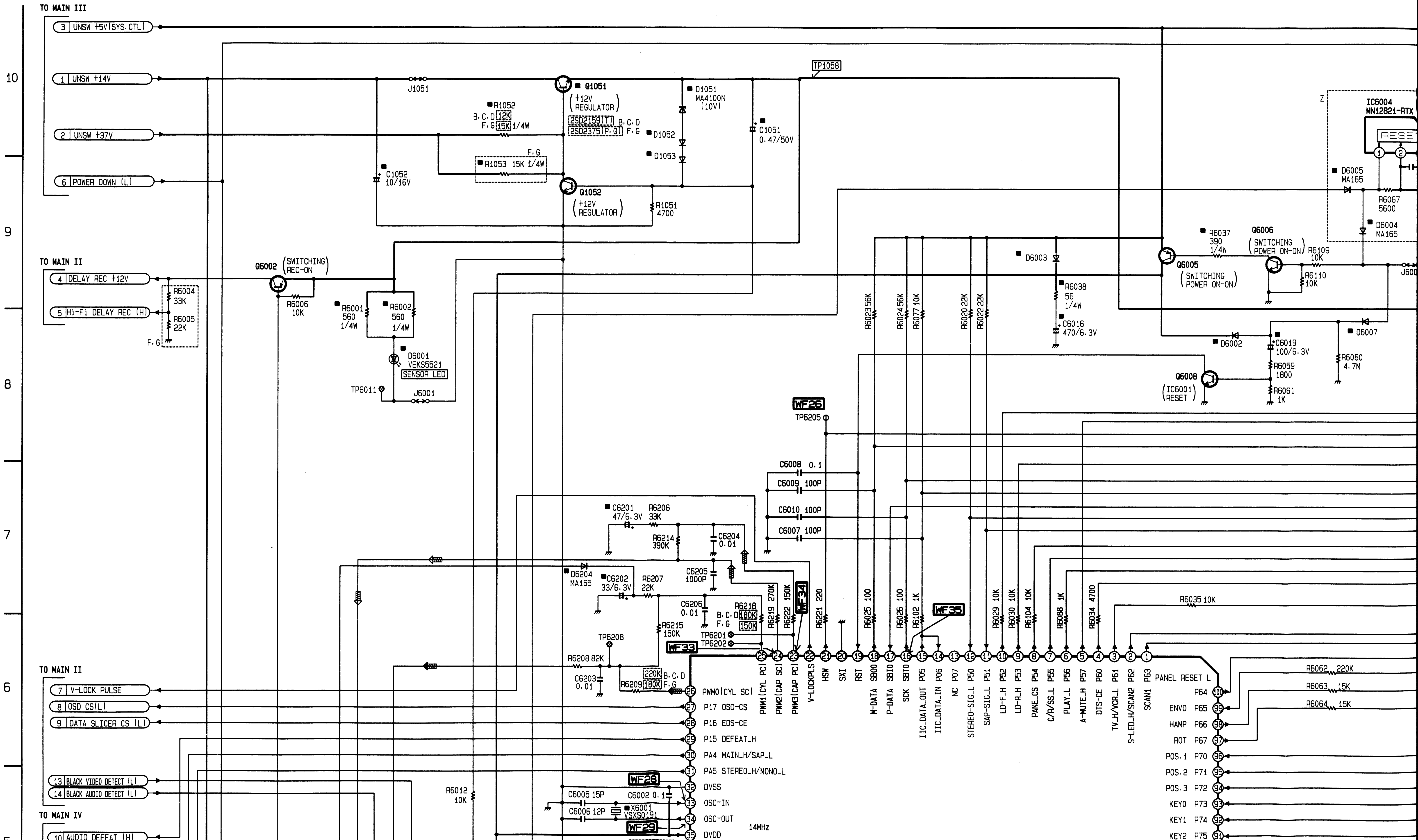
10	4.5	4.5
11	4.4	4.4
12	5.1	5.1
13	2.0	2.0
14	0	0
15	2.0	2.0
16	5.1	5.1
17	2.9	2.9
18	2.1	2.1
19	---	---
20	5.1	5.1
21	0	0
22	5.1	5.1
23	---	---
24	5.1	5.1
Q3001		
E	2.8	2.8
C	0	0
B	2.0	2.0
Q4001		
E	5.1	5.1
C	-18.7	5.1
B	5.1	4.4
Q4002		
E	-13.6	0
C	0	0
B	-19.1	0.8
Q4003		
E	-13.6	0
C	0	0
B	-18.6	0.8
Q4101		
E	0	0
C	11.3	0.5
B	0.2	0.5
Q4601		
E	5.8	5.8
C	12.0	12.0
B	6.4	6.4
TP3001	2.8	2.8
TP3002	2.7	2.3
TP3004	4.3	4.3
TP3005	2.6	2.6
TP3007	2.1	2.1
TP3008	3.4	3.4
TP3009	0	0
TP3010	5.1	5.1
TP3101	3.2	3.2
TP3103	1.8	1.8
TP3302	5.1	5.1
TP3303	4.1	4.1
TP3401	0	0
TP4002	0	0
TP4003	0	0
TP4011	0	0
TP4101	0	0
TP4102	0	0
TP4103	0	0
TP4203	0	0

MAIN I (POWER SUPPLY/SYSTEM CONTROL/SERVO) SCHEMATIC DIAGRAM (B,C,D,F,G)

NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES,
REFER TO BEGINNING OF SCHEMATIC SECTION.

MC-Service

CAPSTAN SERVO CYLINDER SERVO



10
9
8
7
6
TO MAIN III
3 UNSW +5V(SYS.CTL)
1 UNSW +14V
2 UNSW +37V
6 POWER DOWN (L)
TO MAIN II
4 DELAY REC +12V
5 Hi-Fi DELAY REC (H)
R6004 33K
R6005 22K
F.G
Q6002 (SWITCHING REC-ON)
R6006 10K
R6001 560 1/4W
R6002 560 1/4W
D6001 VEKS5521 SENSOR LED
TP6011
J6001
J1051
R1052 B.C.D 12K F.G 15K 1/4W
C1052 10/16V
F.G R1053 15K 1/4W
Q1051 (+12V REGULATOR)
2SD2159(T) B.C.D
2SD2375(P.Q) F.G
Q1052 (+12V REGULATOR)
R1051 4700
D1051 MA4100N (10V)
D1052
D1053
C1051 0.47/50V
TP1058
D6003
R6038 56 1/4W
C6016 470/6.3V
R6023 56K
R6024 56K
R6077 10K
R6020 22K
R6022 22K
R6037 390 1/4W
Q6006 (SWITCHING POWER ON-ON)
R6109 10K
R6110 10K
Q6005 (SWITCHING POWER ON-ON)
J600
Z
IC6004 MN12821-RTX
RESET
D6005 MA165
R6067 5600
D6004 MA165
D6002
C6019 100/6.3V
D6007
R6059 1800
R6060 4.7M
Q6008 (IC6001 RESET)
R6061 1K
WF26
TP6205
C6008 0.1
C6009 100P
C6010 100P
C6007 100P
C6201 47/6.3V
R6206 33K
R6214 390K
C6204 0.01
D6204 MA165
C6202 33/6.3V
R6207 22K
C6205 1000P
C6206 0.01
R6215 150K
R6218 B.C.D 180K F.G 150K
R6219 270K
R6222 150K
WF34
R6221 220
TP6201
TP6202
TP6208
WF33
R6208 82K
C6203 0.01
R6209 220K B.C.D 180K F.G
R6025 100
R6026 100
R6102 1K
WF35
R6029 10K
R6030 10K
R6104 10K
R6088 1K
R6034 4700
R6035 10K
25 24 23 22 21 20 19 18 17 16 15 14 13 12 11 10 9 8 7 6 5 4 3 2 1
PWM1(CYL PC)
PWM2(CAP SC)
PWM3(CAP PC)
V-LOCKPLS
HSW
SXI
RST
M-DATA SBO0
P-DATA SBI0
SCK SBT0
IIC_DATA_OUT P05
IIC_DATA_IN P06
NC P07
STEREO-SIG_L P50
SAP-SIG_L P51
LD-F_H P52
LD-R_H P53
PANE_CS P54
C/R/SS_L P55
PLAY_L P56
A-MUTE_H P57
DTS-CE P60
TV_H/VCR_L P61
S-LED_H/SCAN2 P62
SCAN1 P63
PANEL RESET L
P64 100
ENVD P65 99
HAMP P66 98
ROT P67 97
POS.1 P70 96
POS.2 P71 95
POS.3 P72 94
KEY0 P73 93
KEY1 P74 92
KEY2 P75 91
R6062 220K
R6063 15K
R6064 15K
26 PWM0(CYL SC)
27 P17 OSD-CS
28 P16 EDS-CE
29 P15 DEFEAT_H
30 PA4 MAIN_H/SAP_L
31 PA5 STEREO_H/MONO_L
32 DVSS
33 OSC-IN
34 OSC-OUT
35 DVDD
14MHz
TO MAIN II
7 V-LOCK PULSE
8 OSD CS(L)
9 DATA SLICER CS (L)
13 BLACK VIDEO DETECT (L)
14 BLACK AUDIO DETECT (L)
TO MAIN IV
10 AUDIO DEFEAT (H)
R6012 10K
WF28
C6005 15P
C6002 0.1
C6006 12P
X6001 VSXS0191
WF29

TIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES.
EGINNING OF SCHEMATIC SECTION.

※1 IC6001 replacement note:

Model No.	products	replacement parts
PV-7400 PV-7401 PV-7401-K PV-7450 PV-7451	MN675048A5A3 MN675048A5A2 MN675048A5A1 MN675048A5A	MN675048A5A3

Main C.B.A. replacement note:

Model No.	products	replacement parts
PV-7400	VEPS6023GH VEPS6023GF VEPS6023GK	VEPS6023GH
PV-7401	VEPS6023GJ VEPS6023GA VEPS6023GL	VEPS6023GJ
PV-7450	VEPS6023HH VEPS6023HF	VEPS6023HH
PV-7451	VEPS6023HJ VEPS6023HA	VEPS6023HJ

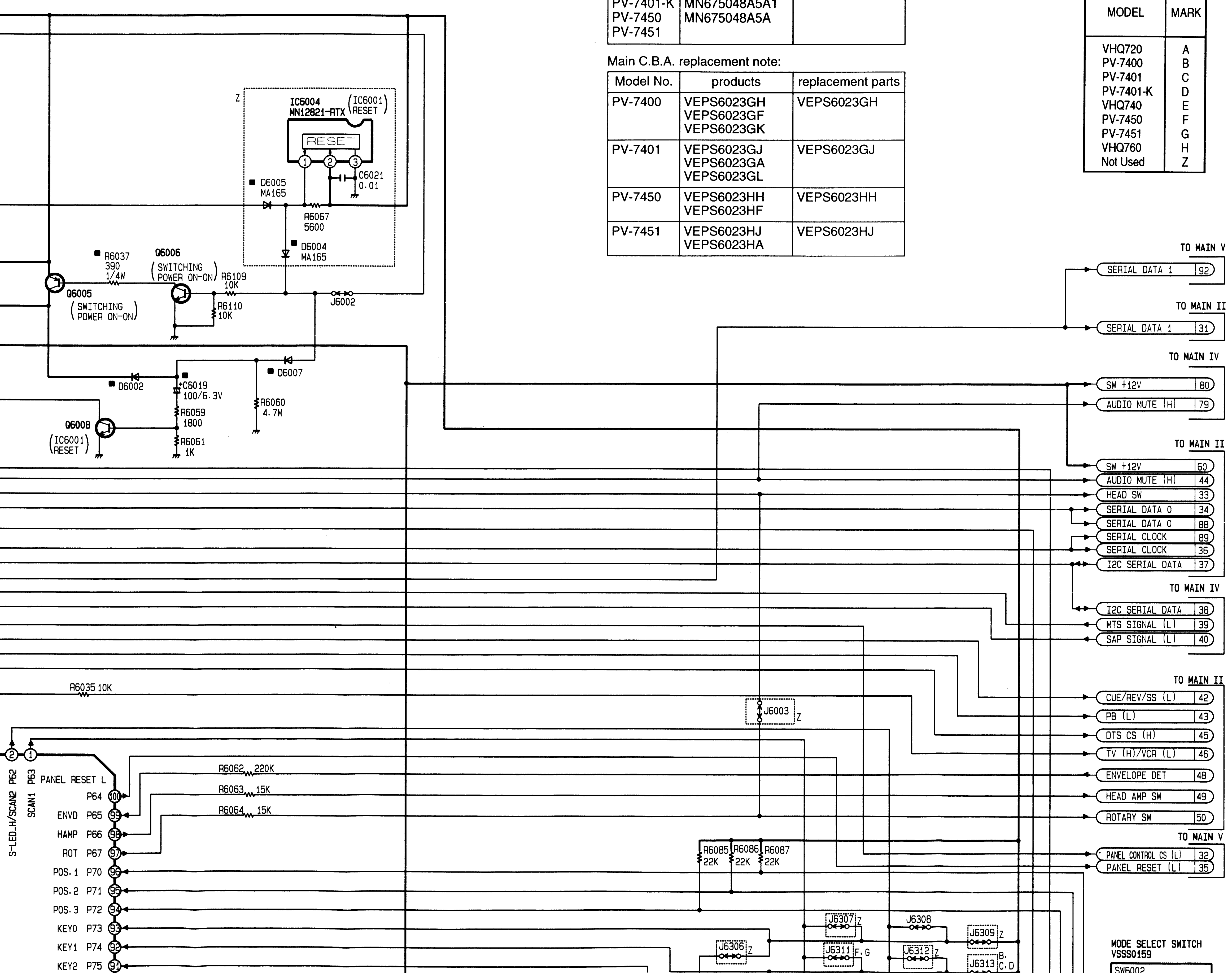
COMPARISON CHART OF MODELS & MARKS

MODEL	MARK
VHQ720	A
PV-7400	B
PV-7401	C
PV-7401-K	D
VHQ740	E
PV-7450	F
PV-7451	G
VHQ760	H
Not Used	Z

I/O CHART FOR IC6001(MN675048A5A3)

PIN NO.	I/O	FUNCTION
1	O	SCAN1
2	O	SCAN2
3	O	TV (H)/VCR (L)
4	O	DTS-CS (H)
5	O	AUDIO MUTE (H)
6	O	PB (L)
7	O	CUE/REV/SS (L)
8	O	PANEL CONTROL CS (L)
9	O	LOADING MOTOR REVERSE (H)
10	O	LOADING MOTOR FORWARD (H)
11	I	SAP SIGNAL (L)
12	I	MTS SIGNAL (L)
13	---	(Not used)
14	I	I²C SERIAL DATA
15	O	I²C SERIAL DATA
16	O	SERIAL CLOCK
17	I	SERIAL DATA 1
18	O	SERIAL DATA O
19	I	RESET
20	---	GND
21	O	HEAD SW
22	O	V-LOCK PULSE
23	O	CAP PHASE ERROR
24	O	CAP SPEED ERROR
25	O	CAP PHASE ERROR
26	O	CAP SPEED ERROR
27	O	OSD CS (L)
28	O	DATA SLICER CS (L)
29	O	AUDIO DEFEAT (H)
30	O	MAIN (H)/SAP (L)
31	O	STEREO (H)/MONO (L)
32	---	GND
33	I	OSC 1
34	O	OSC 2
35	---	VDD
36	O	V-MASK (H) (Not used)
37	O	VIDEO DELAY REC (H)
38	---	(Not used)
39	O	Hi-Fi HEAD SW
40	O	H ROLL ACCELERATION
41	O	FORCED ACCELERATION
42	O	CAP REV(H)/STOP(M)/FWD(L)
43	O	CAP TORQUE LIMIT 1
44	O	7.16MHz
45	O	BEEPER
46	I	PB Hi-Fi AUDIO (H)
47	I	IR DATA
48	O	+12V POWER ON (H)
49	O	I²C SERIAL CLOCK
50	O	AIP CTL SIGNAL (Not used)

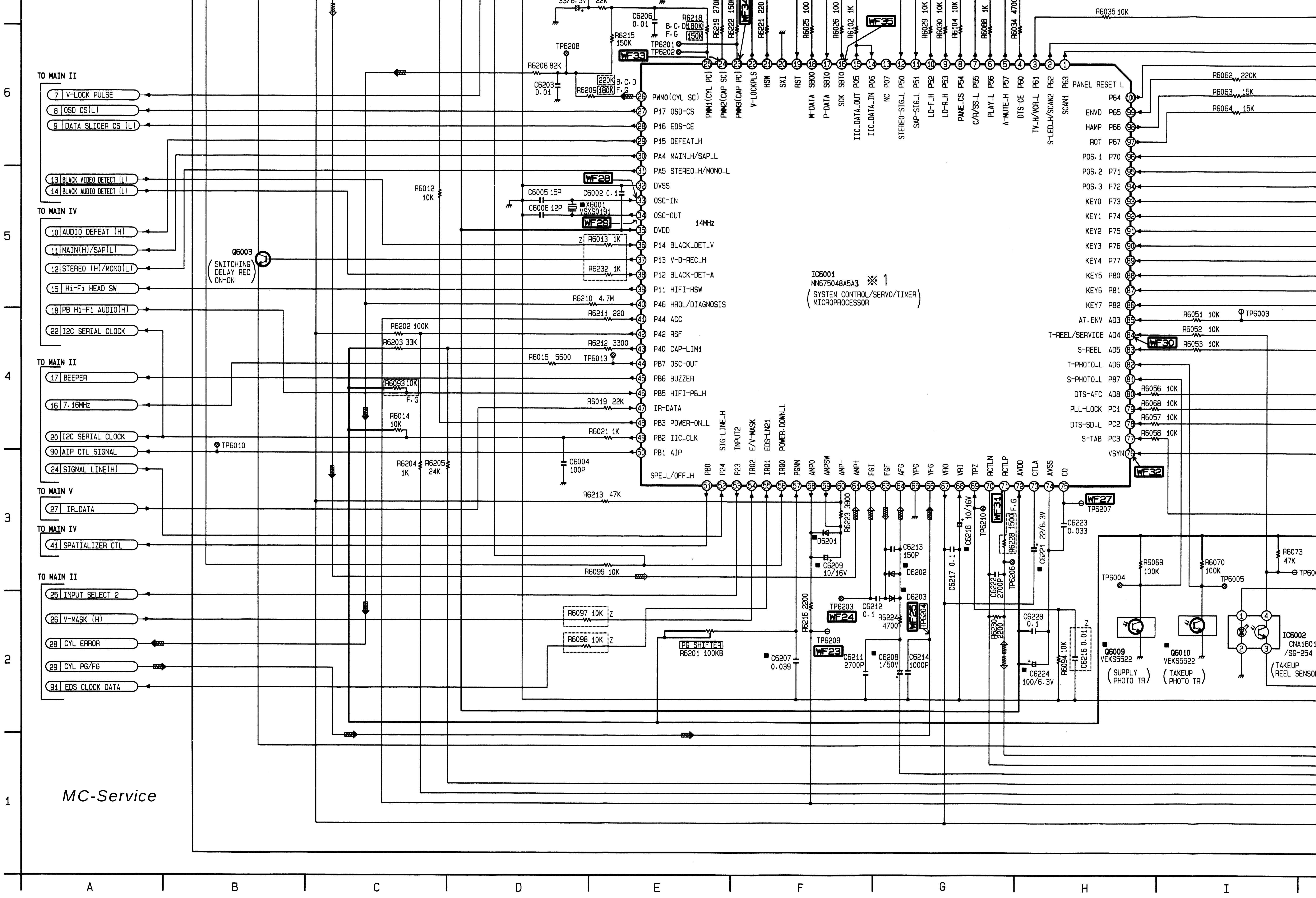
PIN NO.	I/O	FUNCTION
51	O	SPATIALIZER CTL (H/L/OFF)
52	I	SIGNAL LINE (H)
53	I	INPUT SELECT 2 (Not used)
54	O	BLACK DETECT (L)
55	I	EDS CLOCK DATA
56	I	POWER DOWN (L)
57	I	PG SHIFTER
58	O	AMP
59	O	AMP SW
60	---	AMP -
61	I	AMP +
62	I	CAP FG
63	O	CAP FG
64	I	CAP FG
65	---	GND
66	I	CYL PG/FG
67	O	V-REF 1
68	I	V-REF 2
69	---	(Not used)
70	---	CONTROL PULSE (-)
71	---	CONTROL PULSE (+)
72	---	VDD
73	---	CTL AMP
74	---	GND
75	O	PB CTL PULSE
76	---	V-SYNC
77	I	SAFETY TAB BROKEN (H)
78	I	SIGNAL (L)
79	I	CH FREQUENCY LOCK
80	I	AFC
81	I	SUPPLY PHOTO TR (L)
82	I	TAKEUP PHOTO TR (L)
83	I	SUPPLY REEL PULSE
84	I	TAKEUP REEL PULSE/SERVICE (L)
85	I	ENVELOPE VOLTAGE
86	I	KEY DATA 7
87	I	KEY DATA 6
88	I	KEY DATA 5
89	I	KEY DATA 4
90	I	KEY DATA 3
91	I	KEY DATA 2
92	I	KEY DATA 1
93	I	KEY DATA 0
94	I	MODE SW POSITION C
95	I	MODE SW POSITION B
96	I	MODE SW POSITION A
97	O	ROTARY SW
98	O	HEAD AMP SW
99	I	ENVELOPE DET
100	O	PANEL RESET (L)

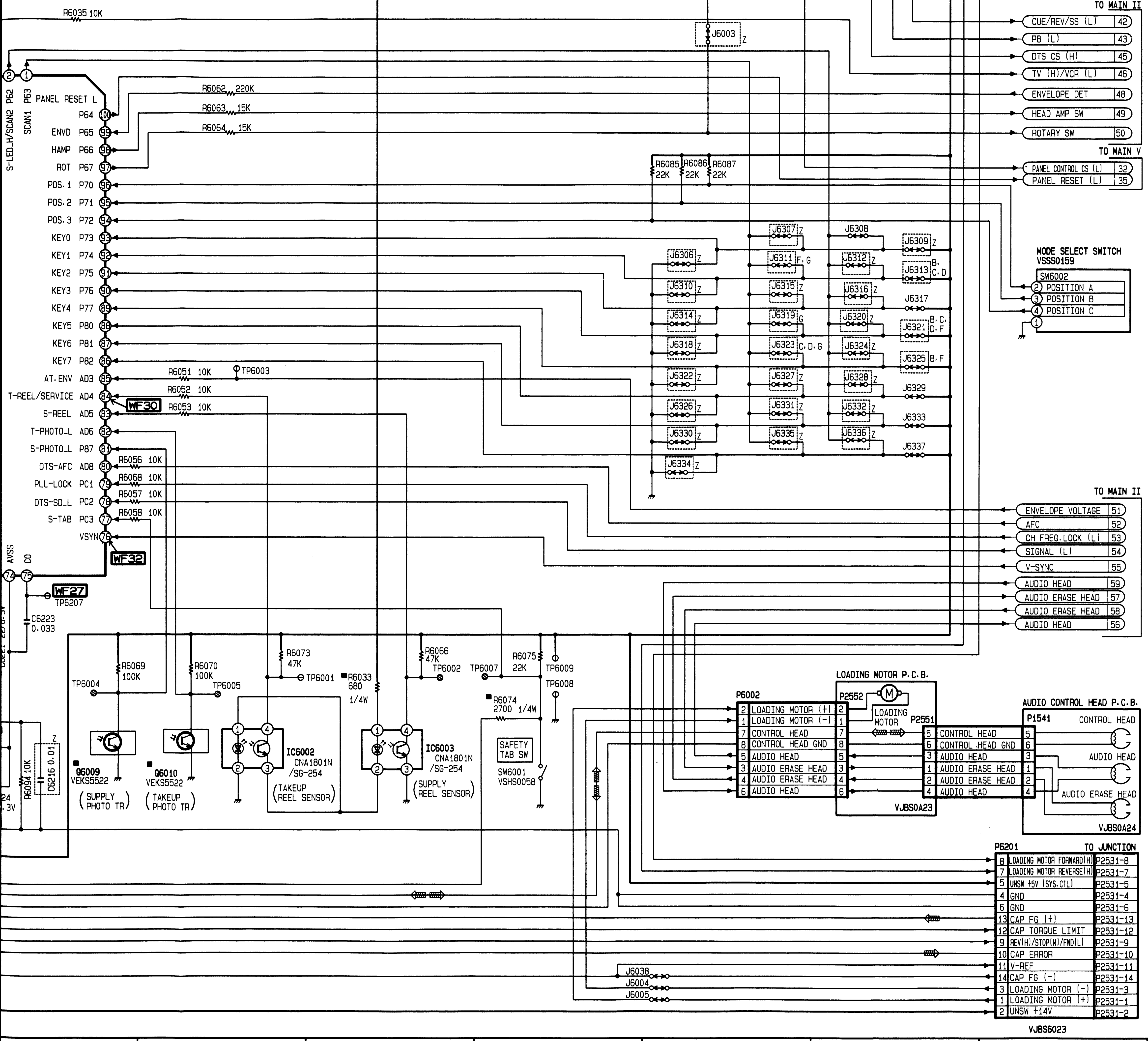

Z
IC6004
MN12821-RTX
(IC6001 RESET)
RESET
① ② ③
■ D6005
MA165
C6021
0.01
R6067
5600
■ D6004
MA165
■ R6037
390
1/4W
Q6006
(SWITCHING POWER ON-ON)
R6109
10K
Q6005
(SWITCHING POWER ON-ON)
R6110
10K
J6002
■ D6002
■ C6019
100/6.3V
■ D6007
R6059
1800
R6060
4.7M
Q6008
(IC6001 RESET)
R6061
1K
TO MAIN V
SERIAL DATA 1 92
TO MAIN II
SERIAL DATA 1 31
TO MAIN IV
SW +12V 80
AUDIO MUTE (H) 79
TO MAIN II
SW +12V 60
AUDIO MUTE (H) 44
HEAD SW 33
SERIAL DATA 0 34
SERIAL DATA 0 88
SERIAL CLOCK 89
SERIAL CLOCK 36
I2C SERIAL DATA 37
TO MAIN IV
I2C SERIAL DATA 38
MTS SIGNAL (L) 39
SAP SIGNAL (L) 40
R6035 10K
J6003 Z
TO MAIN II
CUE/REV/SS (L) 42
PB (L) 43
DTS CS (H) 45
TV (H)/VCR (L) 46
ENVELOPE DET 48
HEAD AMP SW 49
ROTARY SW 50
TO MAIN V
PANEL CONTROL CS (L) 32
PANEL RESET (L) 35
② ①
S-LED_H/SCAN2 P62
SCAN1 P63
PANEL RESET L
P64 100
ENVD P65 99
HAMP P66 98
ROT P67 97
POS.1 P70 96
POS.2 P71 95
POS.3 P72 94
KEY0 P73 93
KEY1 P74 92
KEY2 P75 91
R6062 220K
R6063 15K
R6064 15K
R6085 22K
R6086 22K
R6087 22K
J6306 Z
J6307 Z
J6311 F, G
J6308
J6312 Z
J6309 Z
J6313 B, C, D
MODE SELECT SWITCH
VSSS0159
SW6002

MAIN I VOLTAGE CHART

MODE / PIN NO.	STOP	REC	PLAY	FF	REW
IC6001					
1	5.1	5.1	5.1	5.1	5.1
2	1.4	1.4	1.4	1.4	1.4
3	0.1	0.1	0.1	0.1	0.1
4	0.3	0.3	0.3	0.3	0.3
5	0.2	0.2	0.2	0.2	0.2
6	5.1	5.1	0.1	5.1	5.1
7	5.1	5.1	5.1	5.1	5.1
8	1.3	1.3	1.3	1.3	1.3
9	0	0	0	0	0
10	0	0	0	0	0
11	5.0	5.0	0.1	5.0	5.0
12	5.1	5.1	5.1	5.1	5.1
13	---	---	---	---	---
14	3.9	3.9	3.9	3.9	3.9
15	3.9	3.9	3.9	3.9	3.9
16	4.5	4.5	4.5	4.5	4.5
17	5.1	5.1	5.1	5.1	5.1
18	4.7	4.7	4.7	4.7	4.7
19	5.1	5.1	5.1	5.1	5.1
20	0	0	0	0	0
21	2.6	2.6	2.6	2.6	2.6
22	0.1	0.1	0.1	0.1	0.1
23	2.7	2.7	2.7	2.7	2.7
24	0	2.6	2.6	2.6	2.6
25	1.9	2.3	2.3	2.6	2.6
26	2.6	2.6	2.6	2.6	2.6
27	4.1	4.1	4.1	4.1	4.1
28	0	0	0	0	0
29	5.1	5.1	5.1	5.1	5.1
30	5.1	5.1	5.1	5.1	5.1
31	0	0	0	0	0
32	0	0	0	0	0
33	2.6	2.6	2.6	2.6	2.6
34	2.6	2.6	2.6	2.6	2.6
35	5.1	5.1	5.1	5.1	5.1

MODE / PIN NO.	STOP	REC	PLAY	FF	REW
95	0.1	5.2	5.2	5.2	5.2
96	5.1	0.1	0.1	0.1	0.1
97	2.6	2.6	2.6	2.6	2.6
98	0.1	0.1	0.1	0.1	0.1
99	0.2	0.2	0.2	0.2	0.2
100	5.1	5.1	5.1	5.1	5.1
IC6002					
1	1.3	1.3	1.3	1.3	1.3
2	0	0	0	0	0
3	1.3	1.3	1.3	1.3	1.3
4	---	---	---	---	---
IC6003					
1	0	0	0	0	0
2	1.3	1.3	1.3	1.3	1.3
3	0	0	0	0	0
4	---	---	---	---	---
Q1051					
E	12.0	12.0	12.0	12.0	12.0
C	13.2	13.2	13.2	13.2	13.2
B	12.6	11.6	12.6	12.6	12.6
Q1052					
E	0	0	0	0	0
C	12.6	11.6	12.6	12.6	12.6
B	0.7	0.7	0.7	0.7	0.7
Q6002					
E	12.1	12.1	12.1	12.1	12.1
C	0.5	12.1	0.5	0.5	0.5
B	12.1	11.2	12.1	12.1	12.1
Q6003					
E	0.4	1.1	0.4	0.4	0.4
C	12.1	11.2	12.1	12.1	12.1
B	0	5.0	0	0	0
Q6005					
E	5.1	5.1	5.1	5.1	5.1
C	5.1	5.1	5.1	5.1	5.1


TO MAIN II
7 V-LOCK PULSE
8 OSD CS(L)
9 DATA SLICER CS (L)
13 BLACK VIDEO DETECT (L)
14 BLACK AUDIO DETECT (L)
TO MAIN IV
10 AUDIO DEFEAT (H)
11 MAIN(H)/SAP(L)
12 STEREO (H)/MONO(L)
15 Hi-Fi HEAD SW
18 PB Hi-Fi AUDIO(H)
22 I2C SERIAL CLOCK
TO MAIN II
17 BEEPER
16 7.16MHz
20 I2C SERIAL CLOCK
90 AIP CTL SIGNAL
24 SIGNAL LINE(H)
TO MAIN V
27 IR_DATA
TO MAIN IV
41 SPATIALIZER CTL
TO MAIN II
25 INPUT SELECT 2
26 V-MASK (H)
28 CYL ERROR
29 CYL PG/FG
91 EDS CLOCK DATA
Q6003
SWITCHING DELAY REC ON-ON
TP6010
IC6001
MN675048A5A3 ※1
SYSTEM CONTROL/SERVO/TIMER MICROPROCESSOR
14MHz
X6001
VSX50191
C6005 15P
C6006 12P
C6002 0.1
R6012 10K
R6013 1K
R6232 1K
R6210 4.7M
R6211 220
R6202 100K
R6203 33K
R6212 3300
R6015 5600
TP6013
R6093 10K F.G
R6014 10K
R6019 22K
R6021 1K
R6204 1K
R6205 24K
C6004 100P
R6213 47K
R6099 10K
R6097 10K Z
R6098 10K Z
PG SHIFTER
R6201 100KB
R6208 82K
C6203 0.01
R6209 180K F.G
220K B.C.D
R6215 150K
C6206 0.01
R6218 180K B.C.D 150K F.G
TP6208
TP6201
TP6202
WF23
WF24
WF25
WF27
WF28
WF29
WF30
WF31
WF32
WF33
WF35
R6219 270
R6222 150
R6221 220
R6025 100
R6026 100
R6102 1K
R6029 10K
R6030 10K
R6104 10K
R6088 1K
R6034 470
R6035 10K
26 PWMO(CYL SC)
27 P17 OSD-CS
28 P16 EDS-CE
29 P15 DEFEAT_H
30 PA4 MAIN_H/SAP_L
31 PA5 STEREO_H/MONO_L
32 DVSS
33 OSC-IN
34 OSC-OUT
35 DVDD
36 P14 BLACK_DET_V
37 P13 V-D-REC_H
38 P12 BLACK-DET-A
39 P11 HIFI-HSW
40 P46 HROL/DIAGNOSIS
41 P44 ACC
42 P42 RSF
43 P40 CAP-LIM1
44 PB7 OSC-OUT
45 PB6 BUZZER
46 PB5 HIFI-PB_H
47 IR-DATA
48 PB3 POWER-ON_L
49 PB2 IIC_CLK
50 PB1 AIP
SPE_L/OFF_H
25 PWM1(CYL PC)
24 PWM2(CAP SC)
23 PWM3(CAP PC)
22 V-LOCKPLS
21 HSW
20 SXI
19 RST
18 M-DATA SBO0
17 P-DATA SBI0
16 SCK SBT0
15 IIC_DATA_OUT P05
14 IIC_DATA_IN P06
13 NC P07
12 STEREO-SIG_L P50
11 SAP-SIG_L P51
10 LD-F_H P52
9 LD-R_H P53
8 PANE_CS P54
7 C/R/SS_L P55
6 PLAY_L P56
5 A-MUTE_H P57
4 DTS-CE P60
3 TV_H/VCR_L P61
2 S-LED_H/SCAN2 P62
1 SCAN1 P63
PANEL RESET L
100 P64
99 ENVD P65
98 HAMP P66
97 ROT P67
96 POS.1 P70
95 POS.2 P71
94 POS.3 P72
93 KEY0 P73
92 KEY1 P74
91 KEY2 P75
90 KEY3 P76
89 KEY4 P77
88 KEY5 P80
87 KEY6 P81
86 KEY7 P82
85 AT.ENV AD3
84 T-REEL/SERVICE AD4
83 S-REEL AD5
82 T-PHOTO_L AD6
81 S-PHOTO_L P87
80 DTS-AFC AD8
79 PLL-LOCK PC1
78 DTS-SD_L PC2
77 S-TAB PC3
76 VSYN
R6062 220K
R6063 15K
R6064 15K
R6051 10K
R6052 10K
R6053 10K
TP6003
R6056 10K
R6068 10K
R6057 10K
R6058 10K
SIG-LINE_H
INPUT2
E/V-MASK
EDS-LN21
POWER.DOWN_L
51 PB0
52 P24
53 P23
54 IRQ2
55 IRQ1
56 IRQ0
57 PGMM
58 AMPO
59 AMPSW
60 AMP-
61 AMP+
62 FGI
63 FGF
64 AFG
65 YPG
66 YFG
67 VRO
68 VRI
69 TPZ
70 RCTLN
71 RCTLP
72 AVDD
73 CTLA
74 AVSS
75 CO
TP6207
C6223 0.033
R6223 3900
D6201
C6209 10/16V
C6213 150P
D6202
D6203
TP6203
C6212 0.1
R6224 4700
TP6204
R6216 2200
TP6209
C6207 0.039
C6211 2700P
C6208 1/50V
C6214 1000P
C6217 0.1
C6218 10/16V
TP6210
R6228 1500 F.G
C6222 2700P
TP6206
R6230 2200
C6221 22/6.3V
C6228 0.1
C6224 100/6.3V
R6094 10K
C6216 0.01 Z
TP6004
R6069 100K
R6070 100K
TP6005
R6073 47K
Q6009 VEKS5522
SUPPLY PHOTO TR
Q6010 VEKS5522
TAKEUP PHOTO TR
IC6002
CNA1801
/SG-254
TAKEUP REEL SENSOR
A
B
C
D
E
F
G
H
I
1
2
3
4
5
6


R6035 10K
J6003 Z
TO MAIN II
CUE/REV/SS (L) 42
PB (L) 43
DTS CS (H) 45
TV (H)/VCR (L) 46
ENVELOPE DET 48
HEAD AMP SW 49
ROTARY SW 50
TO MAIN V
PANEL CONTROL CS (L) 32
PANEL RESET (L) 35
S-LED.H/SCAN2 P62
SCAN1 P63
PANEL RESET L
P64 100
ENVD P65 99
HAMP P66 98
ROT P67 97
POS.1 P70 96
POS.2 P71 95
POS.3 P72 94
KEY0 P73 93
KEY1 P74 92
KEY2 P75 91
KEY3 P76 90
KEY4 P77 89
KEY5 P80 88
KEY6 P81 87
KEY7 P82 86
AT.ENV AD3 85
T-REEL/SERVICE AD4 84
S-REEL AD5 83
T-PHOTO_L AD6 82
S-PHOTO_L P87 81
DTS-AFC AD8 80
PLL-LOCK PC1 79
DTS-SD_L PC2 78
S-TAB PC3 77
VSYN 76
AVSS 74
CO 75
R6062 220K
R6063 15K
R6064 15K
R6085 22K
R6086 22K
R6087 22K
R6051 10K
TP6003
R6052 10K
R6053 10K
WF30
WF32
WF27
TP6207
R6056 10K
R6068 10K
R6057 10K
R6058 10K
J6306 Z
J6307 Z
J6308
J6309 Z
J6310 Z
J6311 F, G
J6312 Z
J6313 B, C, D
J6314 Z
J6315 Z
J6316 Z
J6317
J6318 Z
J6319 G
J6320 Z
J6321 B, C, D, F
J6322 Z
J6323 C, D, G
J6324 Z
J6325 B, F
J6326 Z
J6327 Z
J6328 Z
J6329
J6330 Z
J6331 Z
J6332 Z
J6333
J6334 Z
J6335 Z
J6336 Z
J6337
MODE SELECT SWITCH
VSSS0159
SW6002
2 POSITION A
3 POSITION B
4 POSITION C
1
TO MAIN II
ENVELOPE VOLTAGE 51
AFC 52
CH FREQ.LOCK (L) 53
SIGNAL (L) 54
V-SYNC 55
AUDIO HEAD 59
AUDIO ERASE HEAD 57
AUDIO ERASE HEAD 58
AUDIO HEAD 56
C6223 0.033
R6069 100K
R6070 100K
TP6004
TP6005
R6073 47K
TP6001
R6033 680 1/4W
R6066 47K
TP6002
TP6007
R6075 22K
TP6009
TP6008
R6074 2700 1/4W
Q6009 VEKS5522 (SUPPLY PHOTO TR)
Q6010 VEKS5522 (TAKEUP PHOTO TR)
IC6002 CNA1801N /SG-254 (TAKEUP REEL SENSOR)
IC6003 CNA1801N /SG-254 (SUPPLY REEL SENSOR)
SAFETY TAB SW
SW6001 VSHS0058
R6094 10K
C6216 0.01
Z
24
.3V
LOADING MOTOR P.C.B.
P6002
2 LOADING MOTOR (+) 2
1 LOADING MOTOR (-) 1
7 CONTROL HEAD 7
8 CONTROL HEAD GND 8
5 AUDIO HEAD 5
3 AUDIO ERASE HEAD 3
4 AUDIO ERASE HEAD 4
6 AUDIO HEAD 6
P2552
M
LOADING MOTOR
P2551
5 CONTROL HEAD 5
6 CONTROL HEAD GND 6
3 AUDIO HEAD 3
1 AUDIO ERASE HEAD 1
2 AUDIO ERASE HEAD 2
4 AUDIO HEAD 4
VJBS0A23
AUDIO CONTROL HEAD P.C.B.
P1541
CONTROL HEAD
AUDIO HEAD
AUDIO ERASE HEAD
VJBS0A24
P6201
TO JUNCTION
8 LOADING MOTOR FORWARD(H) P2531-8
7 LOADING MOTOR REVERSE(H) P2531-7
5 UNSW +5V (SYS.CTL) P2531-5
4 GND P2531-4
6 GND P2531-6
13 CAP FG (+) P2531-13
12 CAP TORQUE LIMIT P2531-12
9 REV(H)/STOP(M)/FWD(L) P2531-9
10 CAP ERROR P2531-10
11 V-REF P2531-11
14 CAP FG (-) P2531-14
3 LOADING MOTOR (-) P2531-3
1 LOADING MOTOR (+) P2531-1
2 UNSW +14V P2531-2
VJBS6023
J6038
J6004
J6005

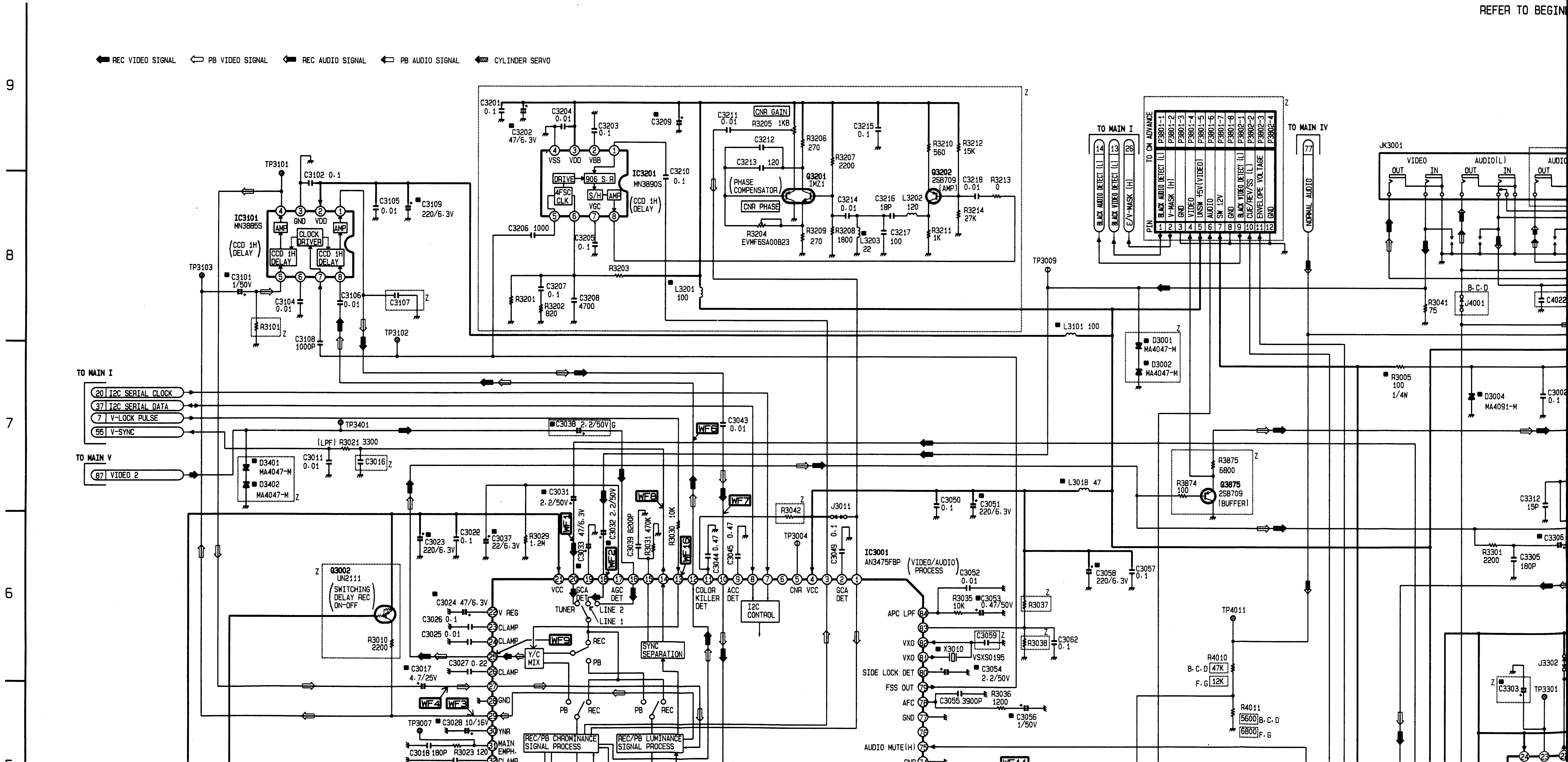
9	0	0	0	0	0
10	0	0	0	0	0
11	5.0	5.0	0.1	5.0	5.0
12	5.1	5.1	5.1	5.1	5.1
13	---	---	---	---	---
14	3.9	3.9	3.9	3.9	3.9
15	3.9	3.9	3.9	3.9	3.9
16	4.5	4.5	4.5	4.5	4.5
17	5.1	5.1	5.1	5.1	5.1
18	4.7	4.7	4.7	4.7	4.7
19	5.1	5.1	5.1	5.1	5.1
20	0	0	0	0	0
21	2.6	2.6	2.6	2.6	2.6
22	0.1	0.1	0.1	0.1	0.1
23	2.7	2.7	2.7	2.7	2.7
24	0	2.6	2.6	2.6	2.6
25	1.9	2.3	2.3	2.6	2.6
26	2.6	2.6	2.6	2.6	2.6
27	4.1	4.1	4.1	4.1	4.1
28	0	0	0	0	0
29	5.1	5.1	5.1	5.1	5.1
30	5.1	5.1	5.1	5.1	5.1
31	0	0	0	0	0
32	0	0	0	0	0
33	2.6	2.6	2.6	2.6	2.6
34	2.6	2.6	2.6	2.6	2.6
35	5.1	5.1	5.1	5.1	5.1
36	---	---	---	---	---
37	0	5.1	0	0	0
38	---	---	---	---	---
39	4.5	4.5	5.2	4.5	4.5
40	2.2	2.2	2.2	2.2	2.2
41	1.1	2.4	2.4	2.4	2.4
42	2.6	0.1	0.1	0.1	5.0
43	5.0	5.0	5.0	5.0	5.0
44	2.6	2.6	2.6	2.6	2.6
45	5.1	5.1	5.1	5.1	5.1
46	5.1	5.1	5.1	5.1	5.1
47	5.0	5.0	5.0	5.0	5.0
48	0	0	0	0	0
49	4.1	4.1	4.1	4.1	4.1
50	5.1	5.1	4.5	5.1	5.1
51	---	---	---	---	---
52	5.1	5.1	5.1	5.1	5.1
53	---	---	---	---	---
54	---	---	---	---	---
55	---	---	---	---	---
56	5.2	5.2	5.2	5.2	5.2
57	3.0	3.0	3.0	3.0	3.0
58	2.4	2.4	2.4	2.4	2.4
59	2.6	2.6	2.6	2.6	2.6
60	2.6	2.6	2.6	2.6	2.6
61	2.6	2.6	2.6	2.6	2.6
62	2.6	2.6	2.6	2.6	2.6
63	2.6	2.6	2.6	2.6	2.6
64	2.6	2.6	2.6	2.6	2.6
65	0	0	0	0	0
66	1.2	1.2	1.2	1.2	1.2
67	2.6	2.6	2.6	2.6	2.6
68	2.6	2.6	2.6	2.6	2.6
69	0	0	0	0	0
70	2.6	2.6	2.6	2.6	2.6
71	2.6	2.6	0	2.6	2.6
72	5.1	5.1	5.1	5.1	5.1
73	2.6	2.6	2.6	2.6	2.6
74	0	0	0	0	0
75	2.6	2.6	2.6	2.6	2.6
76	0.5	0.5	0.5	0.5	0.5
77	0	0	0	0	0
78	5.1	5.1	5.1	5.1	5.1
79	0.1	0.1	0.1	0.1	0.1
80	2.6	2.6	2.6	2.6	2.6
81	5.1	5.1	5.1	5.1	5.1
82	5.1	5.1	5.1	5.1	5.1
83	5.1	5.1	5.1	5.1	5.1
84	0.2	0.2	0.2	0.2	0.2
85	3.7	3.7	5.1	3.7	3.7
86	5.2	5.2	5.2	5.2	5.2
87	5.2	5.2	5.2	5.2	5.2
88	5.2	5.2	5.2	5.2	5.2
89	5.2	5.2	5.2	5.2	5.2
90	5.2	5.2	5.2	5.2	5.2
91	5.2	5.2	5.2	5.2	5.2
92	5.0	5.0	5.0	5.0	5.0
93	1.4	1.4	1.4	1.4	1.4
94	5.2	5.2	5.2	5.2	5.2

3	1.3	1.3	1.3	1.3	1.3
4	---	---	---	---	---
IC6003					
1	0	0	0	0	0
2	1.3	1.3	1.3	1.3	1.3
3	0	0	0	0	0
4	---	---	---	---	---
Q1051					
E	12.0	12.0	12.0	12.0	12.0
C	13.2	13.2	13.2	13.2	13.2
B	12.6	11.6	12.6	12.6	12.6
Q1052					
E	0	0	0	0	0
C	12.6	11.6	12.6	12.6	12.6
B	0.7	0.7	0.7	0.7	0.7
Q6002					
E	12.1	12.1	12.1	12.1	12.1
C	0.5	12.1	0.5	0.5	0.5
B	12.1	11.2	12.1	12.1	12.1
Q6003					
E	0.4	1.1	0.4	0.4	0.4
C	12.1	11.2	12.1	12.1	12.1
B	0	5.0	0	0	0
Q6005					
E	5.1	5.1	5.1	5.1	5.1
C	5.1	5.1	5.1	5.1	5.1
B	4.4	4.4	4.4	4.4	4.4
Q6006					
E	0	0	0	0	0
C	0	0	0	0	0
B	0.8	0.8	0.8	0.8	0.8
Q6008					
E	0	0	0	0	0
C	5.0	5.0	5.0	5.0	5.0
B	0	0	0	0	0
Q6009					
E	0	0	0	0	0
C	5.1	5.1	5.1	5.1	5.1
B	---	---	---	---	---
Q6010					
E	0	0	0	0	0
C	5.1	5.1	5.1	5.1	5.1
B	---	---	---	---	---
TP1058	12.0	12.0	12.0	12.0	12.0
TP6001	---	---	---	---	---
TP6002	0.2	0.2	0.2	0.2	0.2
TP6003	3.4	3.4	3.0	3.4	3.4
TP6004	4.9	4.9	4.9	4.9	4.9
TP6005	5.1	5.1	5.1	5.1	5.1
TP6006	4.9	4.9	4.9	4.9	4.9
TP6009	---	---	---	---	---
TP6010	0	5.1	0	0	0
TP6008	0	0	0	0	0
TP6011	0	0	0	0	0
TP6013	0	0	0	0	0
TP6201	2.6	2.6	2.6	2.6	2.6
TP6202	1.9	2.2	2.2	2.6	2.6
TP6203	2.6	2.6	2.6	2.6	2.6
TP6204	1.2	1.2	1.2	1.2	1.2
TP6205	2.6	2.6	2.6	2.6	2.6
TP6206	0	3.0	0	0	0
TP6207	2.6	2.6	2.6	2.6	2.6
TP6208	2.5	2.5	2.5	2.5	2.5
TP6209	1.1	2.4	2.4	2.4	2.4
TP6210	0	0	0	0	0

UNLESS OTHERWISE SPECIFIED;
PNP TRANSISTORS IS
2SB709(R, S).
NPN TRANSISTORS IS
2SD601(R, S).
DIODES IS MA165
SWITCHES IS EVQ21309K AND
WATTAGE OF RESISTORS IS 1/10W.

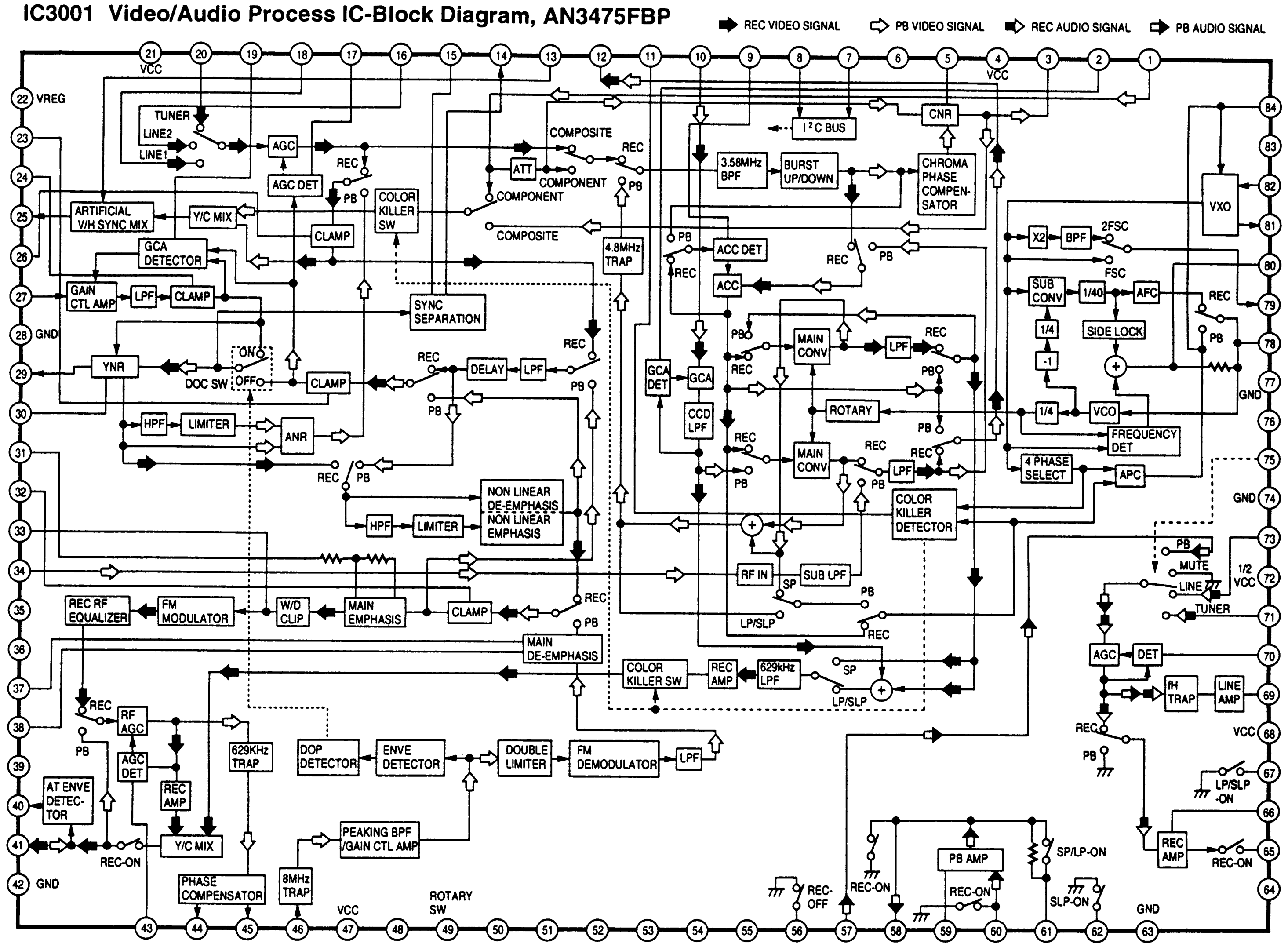
MAIN II (SIGNAL PROCESS/AUDIO) SCHEMATIC DIAGRAM (B,C,D,F,G)

NOTE:
FOR SCHEMATIC
REFER TO BEGIN


9
8
7
6
REC VIDEO SIGNAL
PB VIDEO SIGNAL
REC AUDIO SIGNAL
PB AUDIO SIGNAL
CYLINDER SERVO
TP3101
C3102 0.1
IC3101
MN3885S
(CCD 1H DELAY)
AMP
GND
VDD
CLOCK DRIVER
CCD 1H DELAY
C3105 0.01
C3109 220/6.3V
TP3103
C3101 1/50V
C3104 0.01
R3101
C3106 0.01
C3107
C3108 1000P
TP3102
C3201 0.1
C3202 47/6.3V
C3204 0.01
C3203 0.1
C3209
VSS
VBB
DRIVE
905 S.R
4FSC CLK
S/H
VGC
IC3201
MN3890S
(CCD 1H DELAY)
C3210 0.1
C3206 1000
C3205 0.1
R3203
R3201
C3207 0.1
R3202 820
C3208 4700
L3201 100
C3211 0.01
CNR GAIN
R3205 1KB
C3212
C3213 120
PHASE COMPENSATOR
CNR PHASE
R3204
EVMF6SA00B23
R3206 270
R3207 2200
Q3201
IMZ1
R3209 270
R3208 1800
L3203 22
C3214 0.01
C3215 0.1
C3216 18P
L3202 120
C3217 100
R3210 560
R3212 15K
Q3202
2SB709 (AMP)
C3218 0.01
R3213 0
R3214 27K
R3211 1K
TP3009
L3101 100
TO MAIN I
BLACK AUDIO DETECT (L)
BLACK VIDEO DETECT (L)
E/V-MASK (H)
TO CH ADVANCE
P3801-1
P3801-2
P3801-3
P3801-4
P3801-5
P3801-6
P3801-7
P3801-8
P3802-1
P3802-2
P3802-3
P3802-4
V-MASK (H)
GND
VIDEO
UNSW +5V(VIDEO)
AUDIO
SW 12V
CUE/REV/SS (L)
ENVELOPE VOLTAGE
PIN
TO MAIN IV
NORMAL AUDIO
D3001 MA4047-M
D3002 MA4047-M
JK3001
VIDEO
AUDIO(L)
OUT
IN
R3041 75
B.C.D
J4001
C4022
R3005 100 1/4W
D3004 MA4091-M
C3002 0.1
TO MAIN I
20 I2C SERIAL CLOCK
37 I2C SERIAL DATA
7 V-LOCK PULSE
55 V-SYNC
TO MAIN V
87 VIDEO 2
TP3401
D3401 MA4047-M
D3402 MA4047-M
(LPF) R3021 3300
C3011 0.01
C3016
C3038 2.2/50V
WF6
C3043 0.01
R3875 6800
R3874 100
Q3875
2SB709 (BUFFER)
L3018 47
C3312 15P
C3031 2.2/50V
WF1
WF2
WF8
WF16
WF7
C3023 220/6.3V
C3022 0.1
C3037 22/6.3V
R3029 1.2M
C3033 47/6.3V
C3032 2.2/50V
C3039 8200P
R3031 470K
R3030 10K
C3044 0.47
C3045 0.47
R3042
J3011
C3050 0.1
C3051 220/6.3V
TP3004
C3049 0.1
Q3002
UN2111
(SWITCHING DELAY REC ON-OFF)
R3010 2200
IC3001
AN3475FBP
(VIDEO/AUDIO PROCESS)
C3052 0.01
VCC
GCA DET
AGC DET
TUNER
LINE 2
LINE 1
COLOR KILLER DET
ACC DET
I2C CONTROL
CNR VCC
GCA DET
C3024 47/6.3V
V REG
C3026 0.1
CLAMP
C3025 0.01
CLAMP
WF9
Y/C MIX
REC
PB
C3027 0.22
C3017 4.7/25V
CLAMP
WF4
WF3
GND
TP3007
C3028 10/16V
YNR
C3018 180P
R3023 120
MAIN EMPH.
CLAMP
REC/PB CHROMINANCE SIGNAL PROCESS
REC/PB LUMINANCE SIGNAL PROCESS
SYNC SEPARATION
APC LPF
R3035 10K
C3053 0.47/50V
R3037
VXO
X3010
VSXS0195
C3059
R3038
C3062 0.1
SIDE LOCK DET
C3054 2.2/50V
FSS OUT
AFC
C3055 3900P
R3036 1200
GND
C3056 1/50V
AUDIO MUTE(H)
C3058 220/6.3V
C3057 0.1
R3301 2200
C3305 180P
C3306
TP4011
R4010
B.C.D 47K
F.G 12K
R4011
5600 B.C.D
6800 F.G
J3302
C3303
TP3301

MC-Service

IC3001 Video/Audio Process IC-Block Diagram, AN3475FBP

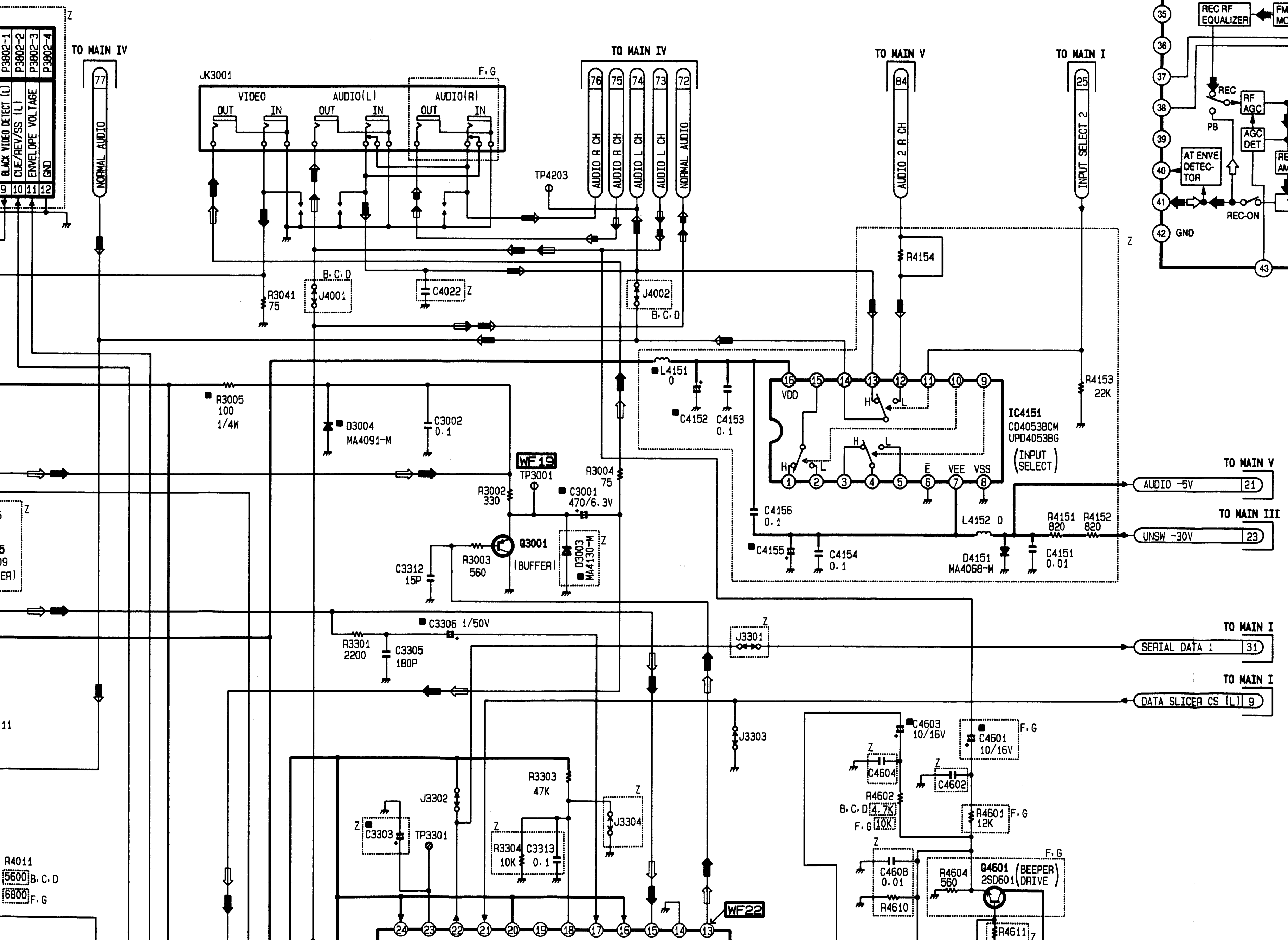


REC VIDEO SIGNAL
PB VIDEO SIGNAL
REC AUDIO SIGNAL
PB AUDIO SIGNAL
VCC
VREG
GND
TUNER
LINE2
LINE1
AGC
AGC DET
ATT
COMPOSITE
COMPONENT
I²C BUS
3.58MHz BPF
BURST UP/DOWN
CNR
CHROMA PHASE COMPEN-SATOR
VXO
ARTIFICIAL V/H SYNC MIX
Y/C MIX
COLOR KILLER SW
CLAMP
GCA DETECTOR
GAIN CTL AMP
LPF
SYNC SEPARATION
4.8MHz TRAP
ACC DET
ACC
YNR
DOC SW
DELAY
GCA DET
GCA
CCD LPF
MAIN CONV
ROTARY
SUB CONV
SIDE LOCK
VCO
FREQUENCY DET
4 PHASE SELECT
APC
AFC
HPF
LIMITER
ANR
NON LINEAR DE-EMPHASIS
NON LINEAR EMPHASIS
COLOR KILLER DETECTOR
RF IN
SUB LPF
REC RF EQUALIZER
FM MODULATOR
W/D CLIP
MAIN EMPHASIS
MAIN DE-EMPHASIS
COLOR KILLER SW
REC AMP
RF AGC
629KHz TRAP
629kHz LPF
DOP DETECTOR
ENVE DETECTOR
DOUBLE LIMITER
FM DEMODULATOR
AT ENVE DETEC-TOR
Y/C MIX
PEAKING BPF /GAIN CTL AMP
PHASE COMPENSATOR
8MHz TRAP
ROTARY SW
MUTE
1/2 VCC
PB AMP
SP/LP-ON
SLP-ON
LP/SLP -ON
REC-ON
REC-OFF
1H TRAP
LINE AMP
DET

COMPARISON CHART OF MODELS & MARKS

MODEL	MARK
VHQ720	A
PV-7400	B
PV-7401	C
PV-7401-K	D
VHQ740	E
PV-7450	F
PV-7451	G
VHQ760	H
Not Used	Z

NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES, REFER TO BEGINNING OF SCHEMATIC SECTION.

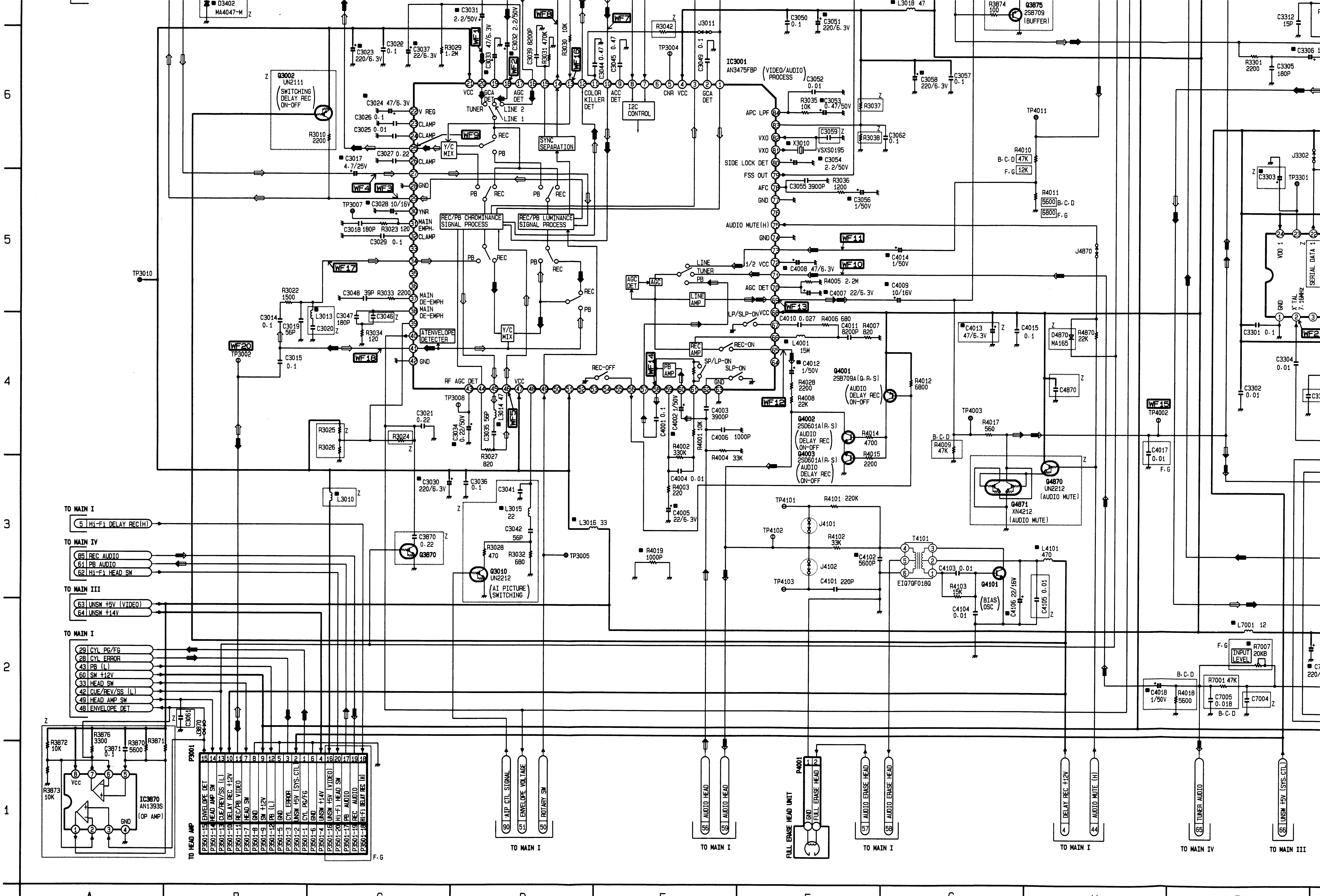


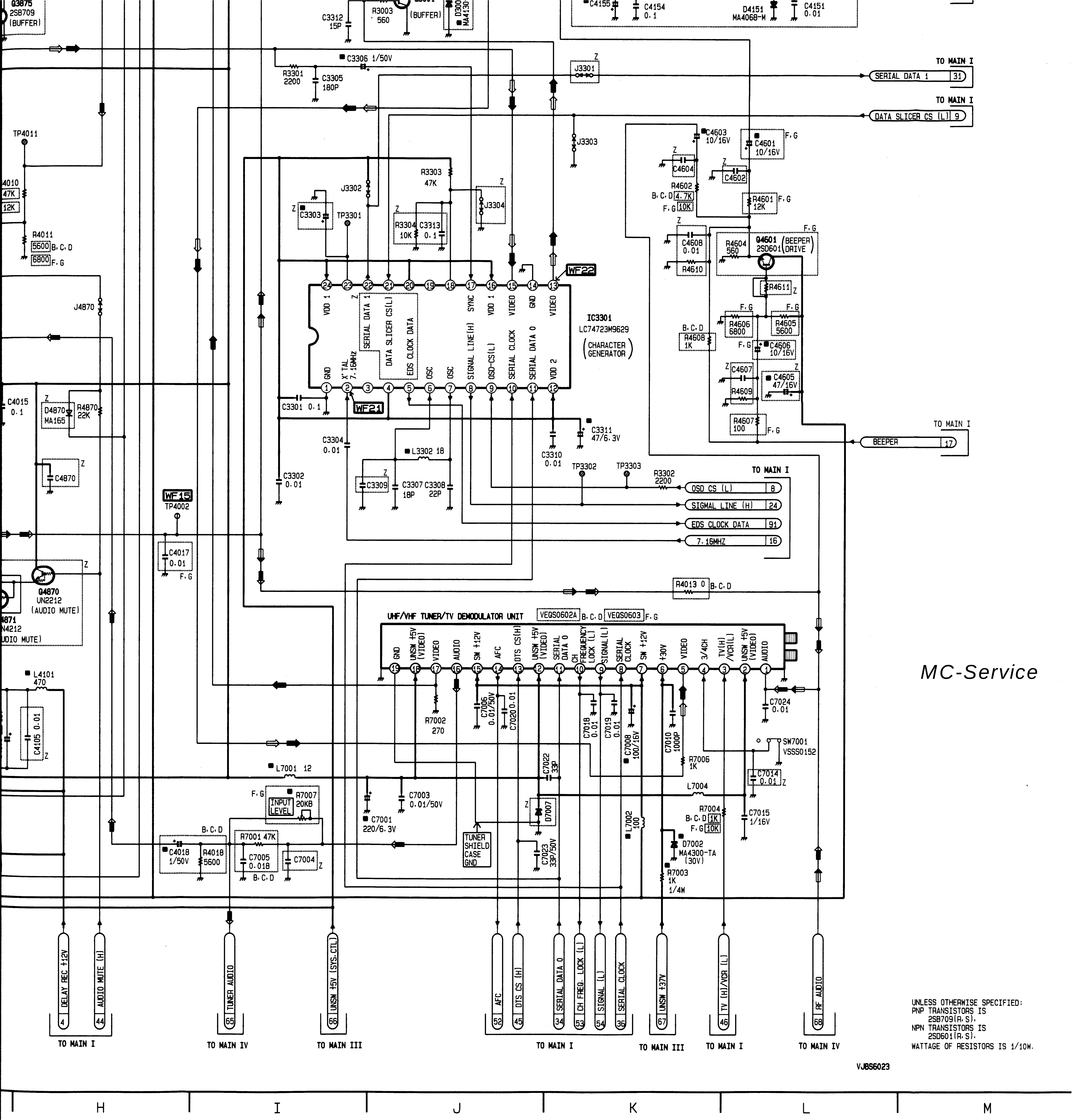
TO MAIN IV
NORMAL AUDIO
JK3001
VIDEO
AUDIO(L)
AUDIO(R)
OUT
IN
F.G
AUDIO R CH
AUDIO L CH
TP4203
TO MAIN V
AUDIO 2 R CH
TO MAIN I
INPUT SELECT 2
R4154
R3041 75
J4001
C4022
J4002
B.C.D
R3005 100 1/4W
D3004 MA4091-M
C3002 0.1
L4151 0
C4152
C4153 0.1
VDD
IC4151
CD4053BCM
UPD4053BG
(INPUT SELECT)
R4153 22K
WF19
TP3001
R3002 330
R3004 75
C3001 470/6.3V
Q3001 (BUFFER)
R3003 560
D3003 MA4130-M
C3312 15P
C4156 0.1
C4155
C4154 0.1
L4152 0
D4151 MA4068-M
R4151 820
R4152 820
C4151 0.01
VEE
VSS
TO MAIN V
AUDIO -5V
TO MAIN III
UNSW -30V
C3306 1/50V
R3301 2200
C3305 180P
J3301
SERIAL DATA 1
DATA SLICER CS (L)
J3303
C4603 10/16V
C4601 10/16V
C4604
C4602
R4602 4.7K 10K
R4601 12K
C4608 0.01
R4604 560
Q4601 2SD601 (BEEPER DRIVE)
R4610
R4611
J3302
C3303
TP3301
R3303 47K
R3304 10K
C3313 0.1
J3304
WF22
R4011 5600 6800
BLACK VIDEO DETECT (L)
CUE/REV/SS (L)
ENVELOPE VOLTAGE
GND
P3802-1
P3802-2
P3802-3
P3802-4

MAIN II VOLTAGE CHART

MODE / PIN NO.	REC	PLAY
IC3001		
1	5.1	5.1
2	3.3	3.3
3	2.1	2.1
4	5.1	5.1
5	4.3	4.3
6	---	---
7	4.2	4.2
8	4.0	4.0
9	2.2	2.2
10	2.8	2.8
11	0.8	0.8
12	2.8	2.8
13	0.4	0.4
14	0.5	0.5
15	1.0	1.0
16	3.1	3.9
17	2.3	1.8
18	3.1	3.1
19	2.6	2.6
20	3.1	3.4
21	5.1	5.1
22	2.0	2.0
23	2.5	2.5
24	2.4	2.4
25	2.0	2.0
26	2.5	2.5
27	2.0	2.0
28	0	0
29	1.9	1.9
30	0	0
31	2.0	2.4

MODE / PIN NO.	REC	PLAY
IC3301		
1	0	0
2	2.8	2.8
3	---	---
4	5.1	5.1
5	2.9	3.4
6	2.6	2.6
7	2.6	2.6
8	5.1	5.1
9	4.1	4.1
10	4.5	4.5
11	4.4	4.4
12	5.1	5.1
13	2.0	2.0
14	0	0
15	2.0	2.0
16	5.1	5.1
17	2.9	2.9
18	2.1	2.1
19	---	---
20	5.1	5.1
21	0	0
22	5.1	5.1
23	---	---
24	5.1	5.1
Q3001		
E	2.8	2.8
C	0	0
B	2.0	2.0
Q4001		
E	5.1	5.1


IC3001
AN3475FBP
(VIDEO/AUDIO PROCESS)
Q3002
UN2111
(SWITCHING DELAY REC ON-OFF)
REC/PB CHROMINANCE SIGNAL PROCESS
REC/PB LUMINANCE SIGNAL PROCESS
SYNC SEPARATION
I2C CONTROL
Y/C MIX
ATENVELOPE DETECTER
AGC DET
LINE AMP
REC AMP
PB AMP
APC LPF
VXO
SIDE LOCK DET
FSS OUT
AFC
GND
AUDIO MUTE(H)
1/2 VCC
AGC DET
LP/SLP-ON VCC
SP/LP-ON
SLP-ON
REC-ON
REC-OFF
LINE
TUNER
PB
REC
COLOR KILLER DET
ACC DET
CNR VCC
GCA DET
AGC DET
V REG
CLAMP
YNR
MAIN EMPH.
MAIN DE-EMPH
RF AGC DET
VCC
Q4001
2SB709A(Q,R,S)
(AUDIO DELAY REC ON-OFF)
Q4002
2SD601A(R,S)
(AUDIO DELAY REC ON-OFF)
Q4003
2SD601A(R,S)
(AUDIO DELAY REC ON-OFF)
Q4870
UN2212
(AUDIO MUTE)
Q4871
XN4212
(AUDIO MUTE)
Q3875
2SB709
(BUFFER)
Q3870
Q3010
UN2212
(AI PICTURE SWITCHING)
Q4101
(BIAS OSC)
T4101
EIQ70F018Q
X3010
VSXS0195
IC3870
AN1393S
(OP AMP)
TO MAIN I
5 Hi-Fi DELAY REC(H)
TO MAIN IV
85 REC AUDIO
61 PB AUDIO
62 Hi-Fi HEAD SW
TO MAIN III
63 UNSW +5V (VIDEO)
64 UNSW +14V
TO MAIN I
29 CYL PG/FG
28 CYL ERROR
43 PB (L)
60 SW +12V
33 HEAD SW
42 CUE/REV/SS (L)
49 HEAD AMP SW
48 ENVELOPE DET
P3001
TO HEAD AMP
P3501-15 ENVELOPE DET
P3501-14 HEAD AMP SW
P3501-13 CUE/REV/SS (L)
P3501-10 DELAY REC +12V
P3501-11 REC/PB VIDEO
P3501-7 HEAD SW
P3501-8 GND
P3501-9 SW +12V
P3501-12 PB (L)
P3501-5 GND
P3501-3 CYL ERROR
P3501-2 UNSW +5V (SYS.CTL)
P3501-1 CYL PG/FG
P3501-6 GND
P3501-4 UNSW +14V
P3501-16 UNSW +5V (VIDEO)
P3501-20 Hi-Fi HEAD SW
P3501-17 PB AUDIO
P3501-19 REC AUDIO
P3501-18 Hi-Fi DELAY REC (H)
90 AIP CTL SIGNAL
51 ENVELOPE VOLTAGE
50 ROTARY SW
TO MAIN I
56 AUDIO HEAD
59 AUDIO HEAD
TO MAIN I
P4001
FULL ERASE HEAD UNIT
GND
FULL ERASE HEAD
57 AUDIO ERASE HEAD
58 AUDIO ERASE HEAD
TO MAIN I
4 DELAY REC +12V
44 AUDIO MUTE (H)
TO MAIN I
65 TUNER AUDIO
TO MAIN IV
66 UNSW +5V (SYS.CTL)
TO MAIN III
INPUT LEVEL
VDD 1
SERIAL DATA 1
X'TAL 7.16MHz
WF1
WF2
WF3
WF4
WF5
WF6
WF7
WF8
WF9
WF10
WF11
WF12
WF13
WF14
WF15
WF17
WF18
WF20
TP3010
TP3002
TP3005
TP3007
TP3008
TP3004
TP4011
TP4003
TP4002
TP4101
TP4102
TP4103
J3011
J4870
J4101
J4102
J3302
A
B
C
D
E
F
G
H
I
1
2
3
4
5
6


IC3301
LC74723M9629
(CHARACTER GENERATOR)
VDD 1
SERIAL DATA 1
DATA SLICER CS(L)
EDS CLOCK DATA
OSC
SIGNAL LINE(H)
OSD-CS(L)
SERIAL CLOCK
SERIAL DATA 0
VDD 2
SYNC
VIDEO
GND
X'TAL 7.16MHz
WF21
WF22
WF15
TP4002
TP4011
TP3301
TP3302
TP3303
Q4870
UN2212
(AUDIO MUTE)
Q4601 2SD601 (BEEPER DRIVE)
Q3875 2SB709 (BUFFER)
UHF/VHF TUNER/TV DEMODULATOR UNIT
VEQS0602A B,C,D
VEQS0603 F,G
GND
UNSW +5V (VIDEO)
AUDIO
SW +12V
AFC
DTS CS(H)
SERIAL DATA 0
CH FREQUENCY LOCK (L)
SIGNAL(L)
SERIAL CLOCK
+30V
3/4CH
TV(H)/VCR(L)
TUNER SHIELD CASE GND
INPUT LEVEL
SW7001 VSSS0152
D7002 MA4300-TA (30V)
TO MAIN I
SERIAL DATA 1 31
DATA SLICER CS (L) 9
BEEPER 17
OSD CS (L) 8
SIGNAL LINE (H) 24
EDS CLOCK DATA 91
7.16MHZ 16
DELAY REC +12V 4
AUDIO MUTE (H) 44
TUNER AUDIO 65
UNSW +5V (SYS.CTL) 66
AFC 52
DTS CS (H) 45
SERIAL DATA 0 34
CH FREQ. LOCK (L) 53
SIGNAL (L) 54
SERIAL CLOCK 36
UNSW +37V 67
TV (H)/VCR (L) 46
RF AUDIO 68
TO MAIN IV
TO MAIN III
H
I
J
K
L
M

UNLESS OTHERWISE SPECIFIED:
PNP TRANSISTORS IS 2SB709(R,S).
NPN TRANSISTORS IS 2SD601(R,S).
WATTAGE OF RESISTORS IS 1/10W.

VJBS6023

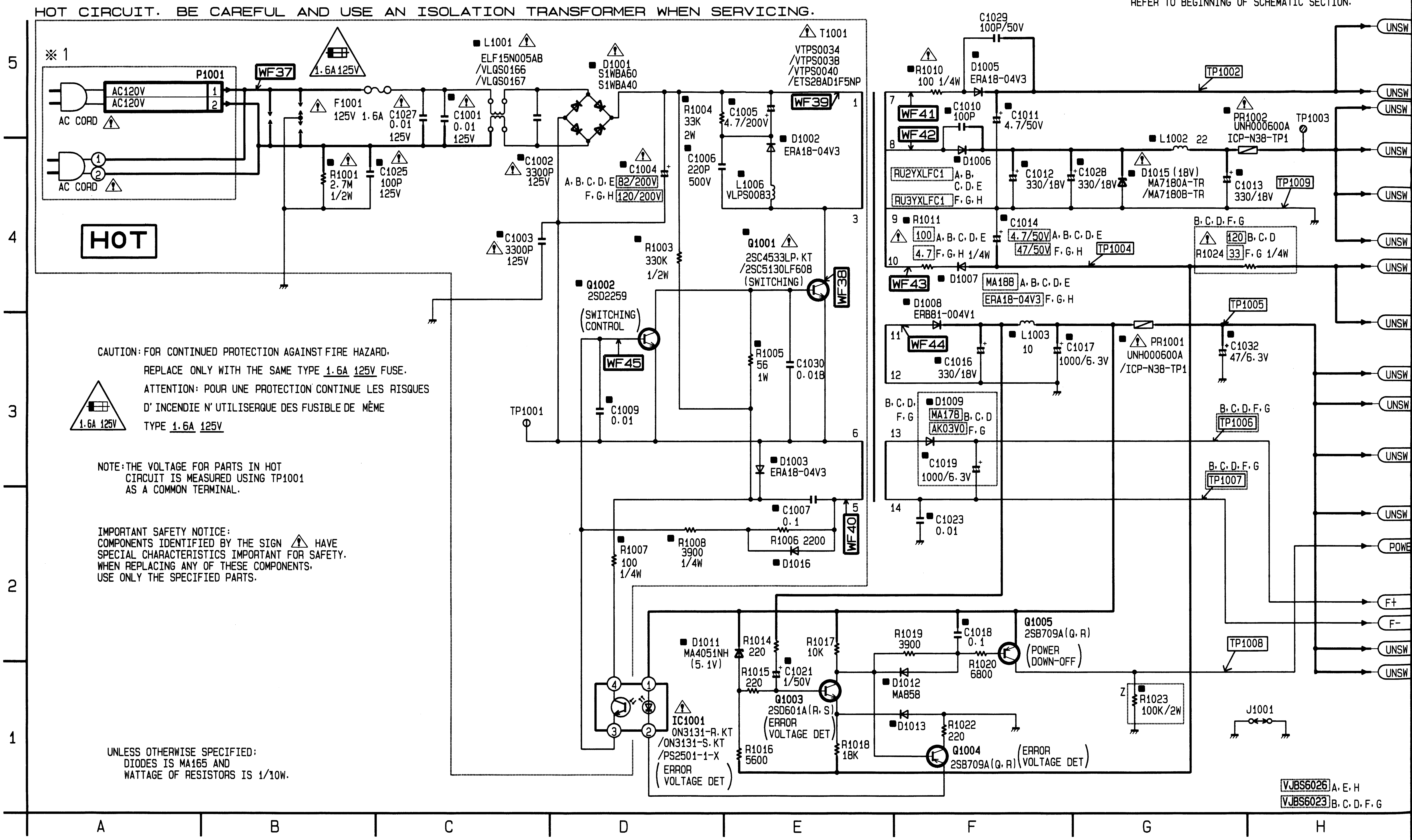
9	2.2	2.2
10	2.8	2.8
11	0.8	0.8
12	2.8	2.8
13	0.4	0.4
14	0.5	0.5
15	1.0	1.0
16	3.1	3.9
17	2.3	1.8
18	3.1	3.1
19	2.6	2.6
20	3.1	3.4
21	5.1	5.1
22	2.0	2.0
23	2.5	2.5
24	2.4	2.4
25	2.0	2.0
26	2.5	2.5
27	2.0	2.0
28	0	0
29	1.9	1.9
30	0	0
31	2.0	2.4
32	2.4	2.4
33	2.0	1.2
34	3.0	2.8
35	2.6	2.6
36	---	---
37	0	1.5
38	4.6	2.2
39	2.4	2.0
40	3.8	5.1
41	2.8	3.6
42	0	0
43	3.4	3.4
44	2.6	2.6
45	2.6	2.6
46	2.6	2.6
47	5.1	5.1
48	1.2	1.0
49	2.6	2.6
50	---	---
51	5.1	5.1
52	---	---
53	---	---
54	---	---
55	---	---
56	5.1	0
57	0.8	2.6
58	2.6	2.6
59	2.6	2.6
60	2.6	2.6
61	2.6	2.6
62	0	0
63	0	0
64	---	---
65	2.6	2.6
66	2.6	2.6
67	2.6	2.6
68	5.1	5.1
69	2.7	2.7
70	0	0
71	2.6	2.6
72	2.6	2.6
73	2.6	2.6
74	0	0
75	0	0
76	---	---
77	0	0
78	2.1	2.1
79	3.0	3.0
80	2.1	2.1
81	2.5	2.5
82	2.8	2.8
83	2.6	2.6
84	2.5	2.5
IC3101		
1	3.4	3.4
2	5.1	5.1
3	0	0
4	3.2	3.2
5	2.9	3.4
6	-2.7	-2.7
7	2.1	2.1
8	3.0	3.0

9	4.1	4.1
10	4.5	4.5
11	4.4	4.4
12	5.1	5.1
13	2.0	2.0
14	0	0
15	2.0	2.0
16	5.1	5.1
17	2.9	2.9
18	2.1	2.1
19	---	---
20	5.1	5.1
21	0	0
22	5.1	5.1
23	---	---
24	5.1	5.1
Q3001		
E	2.8	2.8
C	0	0
B	2.0	2.0
Q4001		
E	5.1	5.1
C	-18.7	5.1
B	5.1	4.4
Q4002		
E	-13.6	0
C	0	0
B	-19.1	0.8
Q4003		
E	-13.6	0
C	0	0
B	-18.6	0.8
Q4101		
E	0	0
C	11.3	0.5
B	0.2	0.5
Q4601		
E	5.8	5.8
C	12.0	12.0
B	6.4	6.4
TP3001	2.8	2.8
TP3002	2.7	2.3
TP3004	4.3	4.3
TP3005	2.6	2.6
TP3007	2.1	2.1
TP3008	3.4	3.4
TP3009	0	0
TP3010	5.1	5.1
TP3101	3.2	3.2
TP3103	1.8	1.8
TP3302	5.1	5.1
TP3303	4.1	4.1
TP3401	0	0
TP4002	0	0
TP4003	0	0
TP4011	0	0
TP4101	0	0
TP4102	0	0
TP4103	0	0
TP4203	0	0

MAIN III (POWER SUPPLY) SCHEMATIC DIAGRAM

NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOT
REFER TO BEGINNING OF SCHEMATIC SECTION.

HOT CIRCUIT. BE CAREFUL AND USE AN ISOLATION TRANSFORMER WHEN SERVICING.


※1
P1001
AC120V
AC120V
AC CORD
AC CORD
WF37
1.6A 125V
F1001 125V 1.6A
R1001 2.7M 1/2W
C1025 100P 125V
C1027 0.01 125V
C1001 0.01 125V
L1001 ELF15N005AB /VLQS0166 /VLQS0167
C1002 3300P 125V
C1003 3300P 125V
D1001 S1WBA60 S1WBA40
C1004 A,B,C,D,E 82/200V F,G,H 120/200V
R1004 33K 2W
C1005 4.7/200V
C1006 220P 500V
L1006 VLPS0083
D1002 ERA18-04V3
T1001 VTPS0034 /VTPS0038 /VTPS0040 /ETS28AD1F5NP
WF39
HOT
R1003 330K 1/2W
Q1001 2SC4533LP,KT /2SC5130LF608 (SWITCHING)
WF38
Q1002 2SD2259 (SWITCHING CONTROL)
WF45
R1005 56 1W
C1030 0.018
C1009 0.01
TP1001
D1003 ERA18-04V3
C1007 0.1
R1006 2200
D1016
WF40
R1007 100 1/4W
R1008 3900 1/4W
D1011 MA4051NH (5.1V)
IC1001 0N3131-R,KT /0N3131-S,KT /PS2501-1-X (ERROR VOLTAGE DET)
R1014 220
R1015 220
C1021 1/50V
R1016 5600
R1017 10K
R1018 18K
Q1003 2SD601A(R,S) (ERROR VOLTAGE DET)
R1019 3900
C1018 0.1
R1020 6800
D1012 MA858
D1013
R1022 220
Q1004 2SB709A(Q,R) (ERROR VOLTAGE DET)
Q1005 2SB709A(Q,R) (POWER DOWN-OFF)
R1023 100K/2W
Z
J1001
C1029 100P/50V
R1010 100 1/4W
D1005 ERA18-04V3
WF41
WF42
C1010 100P
C1011 4.7/50V
D1006
RU2YXLFC1 A,B,C,D,E
RU3YXLFC1 F,G,H
C1012 330/18V
C1028 330/18V
D1015 (18V) MA7180A-TR /MA7180B-TR
L1002 22
PR1002 UNH000600A ICP-N38-TP1
TP1003
C1013 330/18V
TP1009
TP1002
R1011 100 A,B,C,D,E 4.7 F,G,H 1/4W
C1014 4.7/50V A,B,C,D,E 47/50V F,G,H
TP1004
R1024 120 B,C,D 33 F,G 1/4W
B,C,D,F,G
WF43
D1007 MA188 A,B,C,D,E ERA18-04V3 F,G,H
D1008 ERB81-004V1
TP1005
WF44
C1016 330/18V
L1003 10
C1017 1000/6.3V
PR1001 UNH000600A /ICP-N38-TP1
C1032 47/6.3V
D1009 MA178 B,C,D AK03V0 F,G
B,C,D,F,G
C1019 1000/6.3V
TP1006
TP1007
C1023 0.01
TP1008
1 3 5 6 7 8 9 10 11 12 13 14
UNSW
POWE
F+
F-
VJBS6026 A,E,H
VJBS6023 B,C,D,F,G
5 4 3 2 1
A B C D E F G H

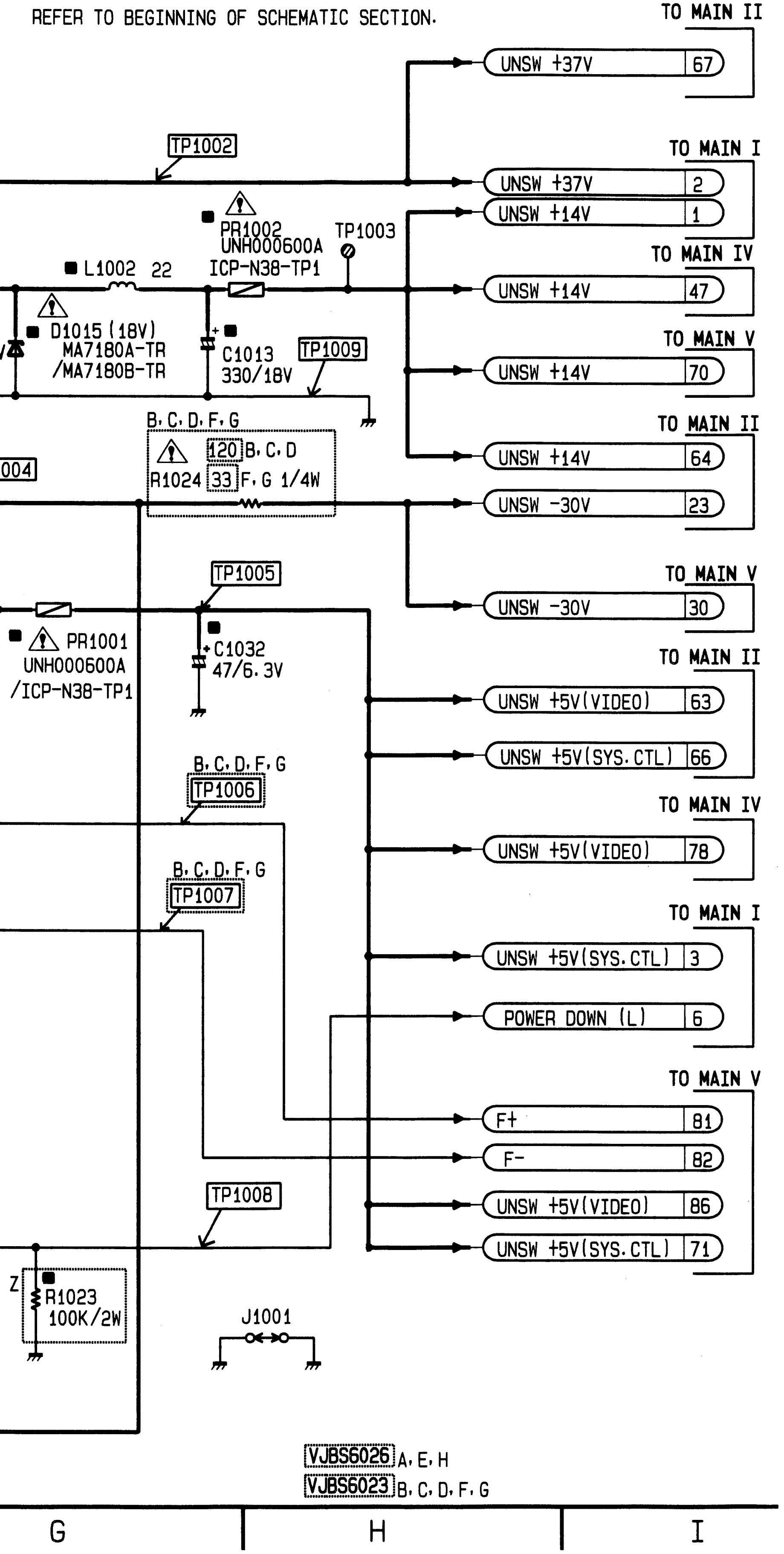
CAUTION: FOR CONTINUED PROTECTION AGAINST FIRE HAZARD,
REPLACE ONLY WITH THE SAME TYPE 1.6A 125V FUSE.
ATTENTION: POUR UNE PROTECTION CONTINUE LES RISQUES
D' INCENDIE N' UTILISERQUE DES FUSIBLE DE MÊME
TYPE 1.6A 125V

NOTE: THE VOLTAGE FOR PARTS IN HOT CIRCUIT IS MEASURED USING TP1001 AS A COMMON TERMINAL.

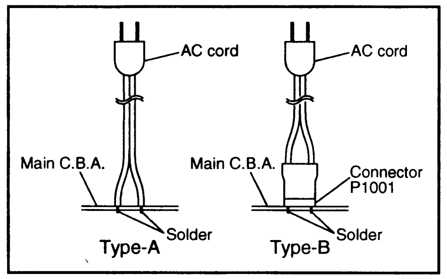
IMPORTANT SAFETY NOTICE:
COMPONENTS IDENTIFIED BY THE SIGN ⚠ HAVE SPECIAL CHARACTERISTICS IMPORTANT FOR SAFETY. WHEN REPLACING ANY OF THESE COMPONENTS, USE ONLY THE SPECIFIED PARTS.

UNLESS OTHERWISE SPECIFIED:
DIODES IS MA165 AND
WATTAGE OF RESISTORS IS 1/10W.

NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES, REFER TO BEGINNING OF SCHEMATIC SECTION.


TO MAIN II
UNSW +37V 67
TP1002
TO MAIN I
UNSW +37V 2
UNSW +14V 1
PR1002
UNH000600A
ICP-N38-TP1
TP1003
TO MAIN IV
L1002 22
UNSW +14V 47
D1015 (18V)
MA7180A-TR
/MA7180B-TR
C1013
330/18V
TP1009
TO MAIN V
UNSW +14V 70
B, C, D, F, G
TO MAIN II
120 B, C, D
R1024 33 F, G 1/4W
UNSW +14V 64
004
UNSW -30V 23
TP1005
TO MAIN V
UNSW -30V 30
PR1001
UNH000600A
/ICP-N38-TP1
C1032
47/6.3V
TO MAIN II
UNSW +5V(VIDEO) 63
UNSW +5V(SYS.CTL) 66
B, C, D, F, G
TP1006
TO MAIN IV
UNSW +5V(VIDEO) 78
B, C, D, F, G
TP1007
TO MAIN I
UNSW +5V(SYS.CTL) 3
POWER DOWN (L) 6
TO MAIN V
F+ 81
F- 82
TP1008
UNSW +5V(VIDEO) 86
UNSW +5V(SYS.CTL) 71
Z
R1023
100K/2W
J1001
VJBS6026 A, E, H
VJBS6023 B, C, D, F, G
G
H
I

※ 1 AC cord replacement note for models PV-7400 and PV-7401:
Either Type-A or B is used as a AC cord for these models. However, for parts standardization and interchangeability, Type-B will be supplied with Connector P1001 as a kit (Part No.: VJAS0195-FS) for replacement. When replacing AC cord on products using Type-A, connect Connector P1001 to Main C.B.A. with solder and connect AC cord to Connector P1001.


AC cord
AC cord
Main C.B.A.
Main C.B.A.
Connector P1001
Solder
Solder
Type-A
Type-B

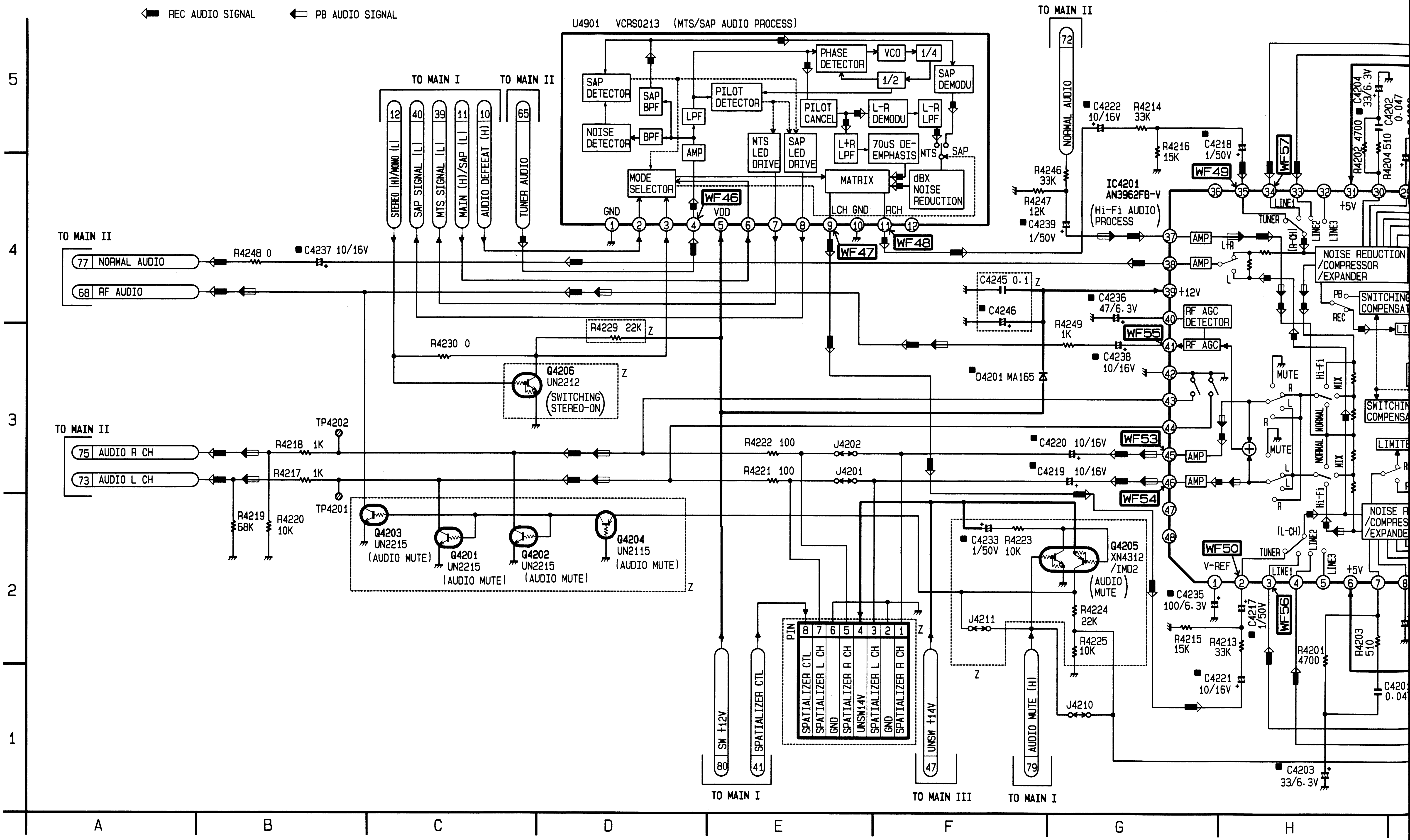
COMPARISON CHART OF MODELS & MARKS

MODEL	MARK
VHQ720	A
PV-7400	B
PV-7401	C
PV-7401-K	D
VHQ740	E
PV-7450	F
PV-7451	G
VHQ760	H
Not Used	Z

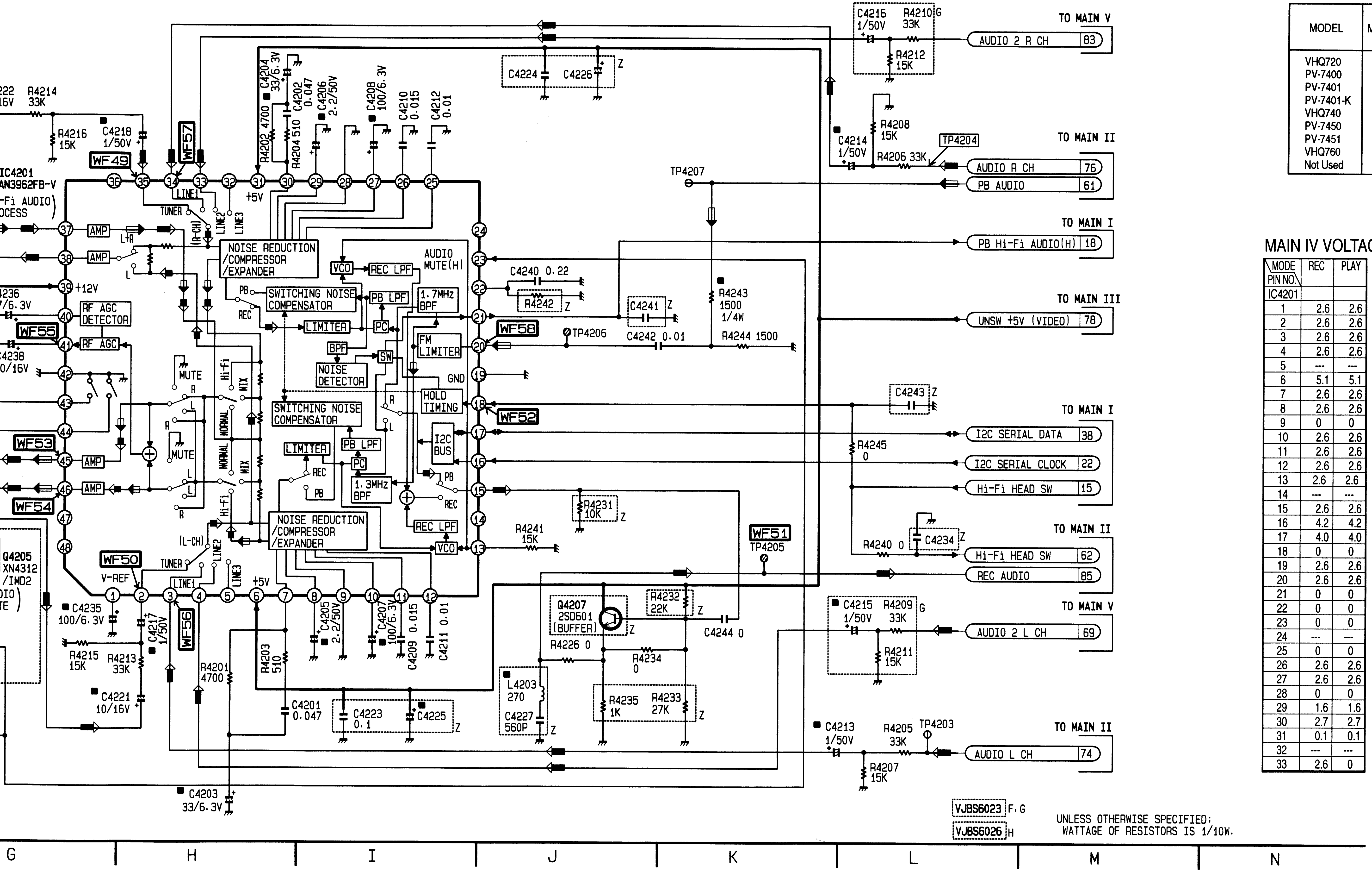
MAIN III VOLTAGE CHART

MODE / PIN NO.	REC	PLAY
IC1001		
1	5.1	5.1
2	4.4	4.4
3	-54.0	-54.0
4	-53.8	-53.8
Q1001		
E	0	0
C	133.5	133.5
B	0.3	0.3
Q1002		
E	0	0
C	0.3	0.3
B	0.6	0.6
Q1003		
E	-0.6	-0.6
C	4.1	4.1
B	0	0
Q1004		
E	4.4	4.4
C	0.1	0.1
B	4.1	4.1
Q1005		
E	5.1	5.1
C	5.2	5.2
B	4.7	4.7
TP1001	0	0
TP1002	36.5	36.5
TP1003	13.5	13.5
TP1004	-30.0	-30.0
TP1005	0	0
TP1006	-18.9	-18.9
TP1007	-24.2	-24.2
TP1008	5.1	5.1
TP1009	0	0

MAIN IV (Hi-Fi) SCHEMATIC DIAGRAM (F,G,H)


REC AUDIO SIGNAL
PB AUDIO SIGNAL
U4901 VCRS0213 (MTS/SAP AUDIO PROCESS)
SAP DETECTOR
NOISE DETECTOR
SAP BPF
BPF
LPF
AMP
PILOT DETECTOR
PHASE DETECTOR
VCO
1/4
1/2
SAP DEMODU
PILOT CANCEL
L-R DEMODU
L-R LPF
L+R LPF
70uS DE-EMPHASIS
MTS
SAP
MTS LED DRIVE
SAP LED DRIVE
MODE SELECTOR
MATRIX
dBX NOISE REDUCTION
GND
VDD
LCH GND
RCH
WF46
WF47
WF48
TO MAIN I
TO MAIN II
STEREO (H)/MONO (L)
SAP SIGNAL (L)
MTS SIGNAL (L)
MAIN (H)/SAP (L)
AUDIO DEFEAT (H)
TUNER AUDIO
NORMAL AUDIO
77 NORMAL AUDIO
68 RF AUDIO
R4248 0
C4237 10/16V
R4229 22K
R4230 0
Q4206 UN2212 (SWITCHING STEREO-ON)
75 AUDIO R CH
73 AUDIO L CH
TP4202
TP4201
R4218 1K
R4217 1K
R4219 68K
R4220 10K
Q4203 UN2215 (AUDIO MUTE)
Q4201 UN2215 (AUDIO MUTE)
Q4202 UN2215 (AUDIO MUTE)
Q4204 UN2115 (AUDIO MUTE)
R4222 100
R4221 100
J4202
J4201
PIN
SPATIALIZER CTL
SPATIALIZER L CH
GND
SPATIALIZER R CH
UNSW14V
SPATIALIZER L CH
GND
SPATIALIZER R CH
SW +12V
SPATIALIZER CTL
UNSW +14V
AUDIO MUTE (H)
TO MAIN III
C4233 1/50V
R4223 10K
Q4205 XN4312 /IMD2 (AUDIO MUTE)
R4224 22K
R4225 10K
J4211
J4210
C4245 0.1
C4246
C4236 47/6.3V
R4249 1K
C4238 10/16V
D4201 MA165
C4220 10/16V
C4219 10/16V
WF53
WF54
WF55
C4222 10/16V
R4214 33K
R4216 15K
C4218 1/50V
R4246 33K
R4247 12K
C4239 1/50V
IC4201 AN3962FB-V (Hi-Fi AUDIO PROCESS)
WF49
WF57
WF50
WF56
C4204 33/6.3V
C4202 0.047
R4202 4700
R4204 510
+5V
+12V
AMP
L+R
(R-CH)
(L-CH)
TUNER
LINE1
LINE2
LINE3
NOISE REDUCTION /COMPRESSOR /EXPANDER
SWITCHING COMPENSAT
RF AGC DETECTOR
RF AGC
PB
REC
MUTE
Hi-Fi
MIX
NORMAL
LIMITE
V-REF
C4235 100/6.3V
C4217 1/50V
R4215 15K
R4213 33K
C4221 10/16V
R4201 4700
R4203 510
C4201 0.047
C4203 33/6.3V
5
4
3
2
1
A
B
C
D
E
F
G
H

NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES,
REFER TO BEGINNING OF SCHEMATIC SECTION.


IC4201
AN3962FB-V
Hi-Fi AUDIO PROCESS
NOISE REDUCTION /COMPRESSOR /EXPANDER
SWITCHING NOISE COMPENSATOR
LIMITER
PC
BPF
NOISE DETECTOR
SW
VCO
REC LPF
PB LPF
1.7MHz BPF
FM LIMITER
HOLD TIMING
I2C BUS
1.3MHz BPF
AUDIO MUTE(H)
GND
RF AGC DETECTOR
RF AGC
AMP
MUTE
NORMAL
MIX
Hi-Fi
LINE1
LINE2
LINE3
TUNER
(R-CH)
(L-CH)
L+R
+12V
+5V
V-REF
Q4207
2SD601
(BUFFER)
WF49
WF50
WF51
WF52
WF53
WF54
WF55
WF56
WF57
WF58
TP4203
TP4204
TP4205
TP4206
TP4207
C4216 1/50V
R4210 33K
R4212 15K
C4224
C4226
C4204 33/6.3V
C4202 0.047
C4206 2.2/50V
C4208 100/6.3V
C4210 0.015
C4212 0.01
R4202 4700
R4204 510
R4214 33K
R4216 15K
C4218 1/50V
C4214 1/50V
R4208 15K
R4206 33K
C4240 0.22
R4242
C4241
C4242 0.01
R4243 1500 1/4W
R4244 1500
C4243
R4245 0
R4231 10K
R4241 15K
R4240 0
C4234
C4235 100/6.3V
C4217 1/50V
R4215 15K
R4213 33K
C4221 10/16V
R4201 4700
R4203 510
C4201 0.047
C4205 2.2/50V
C4207 100/6.3V
C4209 0.015
C4211 0.01
C4223 0.1
C4225
C4203 33/6.3V
L4203 270
C4227 560P
R4226 0
R4232 22K
R4234 0
R4235 1K
R4233 27K
C4244 0
C4215 1/50V
R4209 33K
R4211 15K
C4213 1/50V
R4205 33K
R4207 15K
TO MAIN V
AUDIO 2 R CH 83
TO MAIN II
AUDIO R CH 76
PB AUDIO 61
TO MAIN I
PB Hi-Fi AUDIO(H) 18
TO MAIN III
UNSW +5V (VIDEO) 78
TO MAIN I
I2C SERIAL DATA 38
I2C SERIAL CLOCK 22
Hi-Fi HEAD SW 15
TO MAIN II
Hi-Fi HEAD SW 62
REC AUDIO 85
TO MAIN V
AUDIO 2 L CH 69
TO MAIN II
AUDIO L CH 74
VJBS6023 F, G
VJBS6026 H
G
H
I
J
K
L
M
N

UNLESS OTHERWISE SPECIFIED;
WATTAGE OF RESISTORS IS 1/10W.

COMPARISON CHART
OF MODELS & MARKS

MODEL	MARK
VHQ720	A
PV-7400	B
PV-7401	C
PV-7401-K	D
VHQ740	E
PV-7450	F
PV-7451	G
VHQ760	H
Not Used	Z

MAIN IV VOLTAGE CHART

MODE / PIN NO.	REC	PLAY
IC4201		
1	2.6	2.6
2	2.6	2.6
3	2.6	2.6
4	2.6	2.6
5	---	---
6	5.1	5.1
7	2.6	2.6
8	2.6	2.6
9	0	0
10	2.6	2.6
11	2.6	2.6
12	2.6	2.6
13	2.6	2.6
14	---	---
15	2.6	2.6
16	4.2	4.2
17	4.0	4.0
18	0	0
19	2.6	2.6
20	2.6	2.6
21	0	0
22	0	0
23	0	0
24	---	---
25	0	0
26	2.6	2.6
27	2.6	2.6
28	0	0
29	1.6	1.6
30	2.7	2.7
31	0.1	0.1
32	---	---
33	2.6	0

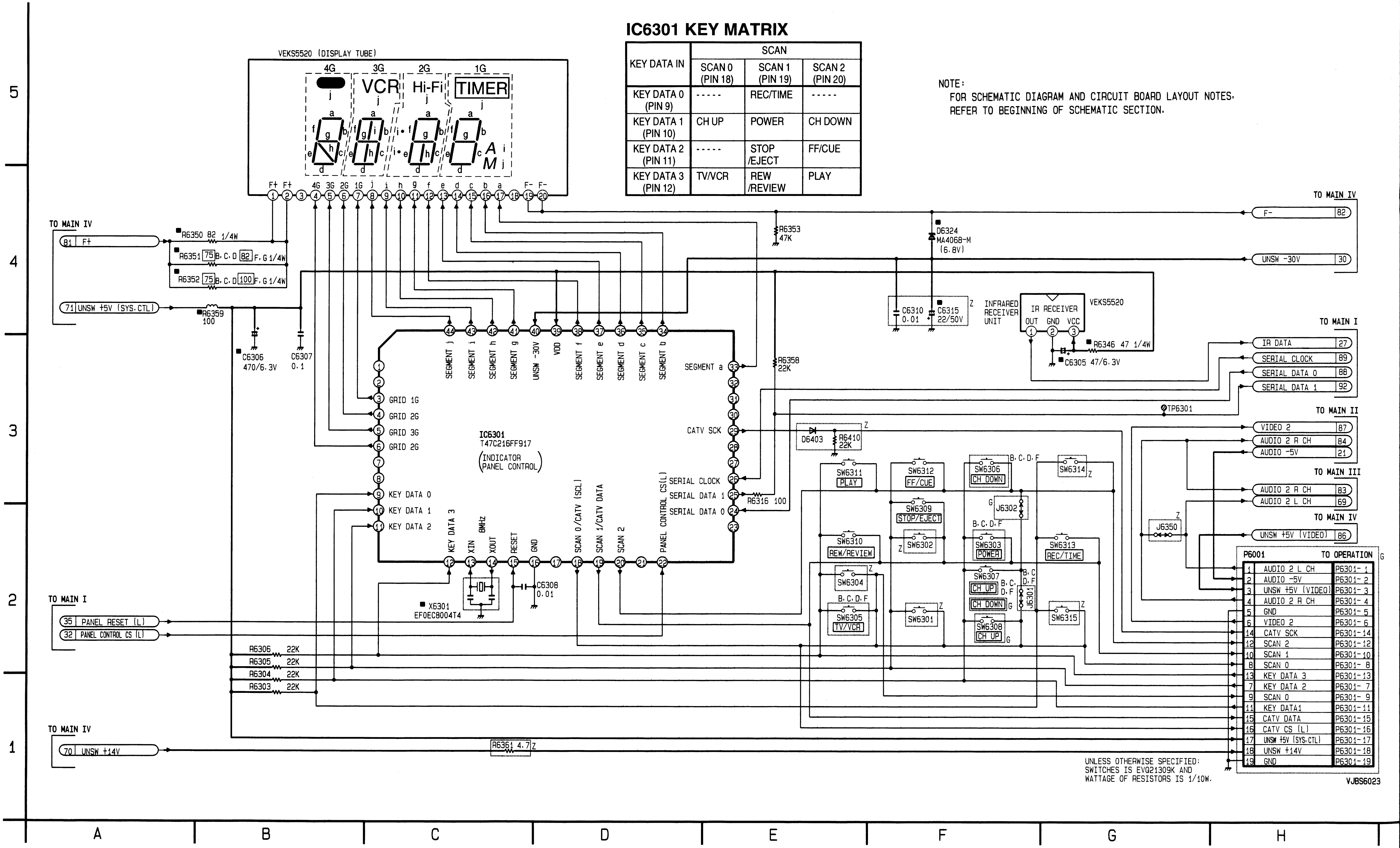
MODE / PIN NO.	REC	PLAY
34	2.6	2.6
35	2.6	2.6
36	---	---
37	2.6	2.6
38	2.6	2.6
39	11.3	11.3
40	0.5	0.5
41	6.2	6.2
42	0	0
43	0	0
44	0	0
45	6.2	6.2
46	6.2	6.2
47	---	---
48	---	---
TP4201	0	0
TP4202	0	0
TP4203	0	0
TP4204	0	0
TP4205	2.7	2.7
TP4206	2.7	2.7
TP4207	0	0

MAIN V (OPERATION) SCHEMATIC DIAGRAM (B,C,D,F,G)

IC6301 KEY MATRIX

KEY DATA IN	SCAN		
	SCAN 0 (PIN 18)	SCAN 1 (PIN 19)	SCAN 2 (PIN 20)
KEY DATA 0 (PIN 9)	-----	REC/TIME	-----
KEY DATA 1 (PIN 10)	CH UP	POWER	CH DOWN
KEY DATA 2 (PIN 11)	-----	STOP /EJECT	FF/CUE
KEY DATA 3 (PIN 12)	TV/VCR	REW /REVIEW	PLAY

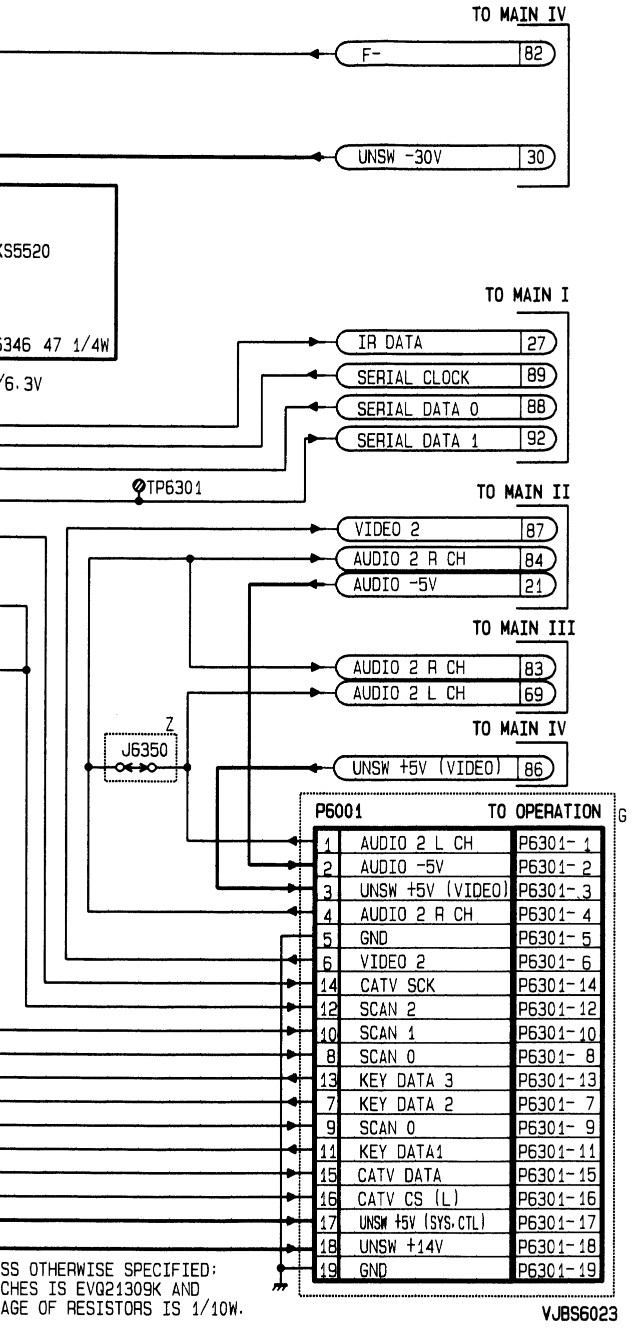
NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES, REFER TO BEGINNING OF SCHEMATIC SECTION.


VEKS5520 (DISPLAY TUBE)
4G 3G 2G 1G
VCR Hi-Fi TIMER
A M
F+ F+ 4G 3G 2G 1G j i h g f e d c b a F- F-
TO MAIN IV
81 F+
R6350 82 1/4W
R6351 75 B,C,D 82 F,G 1/4W
R6352 75 B,C,D 100 F,G 1/4W
71 UNSW +5V (SYS.CTL)
R6359 100
C6306 470/6.3V
C6307 0.1
R6353 47K
D6324 MA4068-M (6.8V)
C6310 0.01
C6315 22/50V
INFRARED RECEIVER UNIT
IR RECEIVER
OUT GND VCC
VEKS5520
R6346 47 1/4W
C6305 47/6.3V
F- 82
UNSW -30V 30
TO MAIN I
IR DATA 27
SERIAL CLOCK 89
SERIAL DATA 0 88
SERIAL DATA 1 92
TP6301
TO MAIN II
VIDEO 2 87
AUDIO 2 R CH 84
AUDIO -5V 21
TO MAIN III
AUDIO 2 R CH 83
AUDIO 2 L CH 69
TO MAIN IV
UNSW +5V (VIDEO) 86
SEGMENT j SEGMENT i SEGMENT h SEGMENT g UNSW -30V VDD SEGMENT f SEGMENT e SEGMENT d SEGMENT c SEGMENT b
SEGMENT a
R6358 22K
GRID 1G
GRID 2G
GRID 3G
GRID 2G
IC6301 T47C216FF917 (INDICATOR PANEL CONTROL)
CATV SCK
D6403
R6410 22K
SERIAL CLOCK
SERIAL DATA 1
SERIAL DATA 0
R6316 100
KEY DATA 0
KEY DATA 1
KEY DATA 2
KEY DATA 3 XIN XOUT RESET GND SCAN 0/CATV (SCL) SCAN 1/CATV DATA SCAN 2 PANEL CONTROL CS(L)
8MHz
X6301 EF0EC8004T4
C6308 0.01
SW6311 PLAY
SW6312 FF/CUE
SW6306 CH DOWN
SW6314
SW6309 STOP/EJECT
J6302
SW6310 REW/REVIEW
SW6302
SW6303 POWER
SW6313 REC/TIME
J6350
SW6304
SW6307 CH UP
CH DOWN
J6301
SW6305 TV/VCR
SW6301
SW6308 CH UP
SW6315
B,C,D,F
TO MAIN I
35 PANEL RESET (L)
32 PANEL CONTROL CS (L)
R6306 22K
R6305 22K
R6304 22K
R6303 22K
TO MAIN IV
70 UNSW +14V
R6361 4.7
P6001 TO OPERATION
1 AUDIO 2 L CH P6301-1
2 AUDIO -5V P6301-2
3 UNSW +5V (VIDEO) P6301-3
4 AUDIO 2 R CH P6301-4
5 GND P6301-5
6 VIDEO 2 P6301-6
14 CATV SCK P6301-14
12 SCAN 2 P6301-12
10 SCAN 1 P6301-10
8 SCAN 0 P6301-8
13 KEY DATA 3 P6301-13
7 KEY DATA 2 P6301-7
9 SCAN 0 P6301-9
11 KEY DATA1 P6301-11
15 CATV DATA P6301-15
16 CATV CS (L) P6301-16
17 UNSW +5V (SYS.CTL) P6301-17
18 UNSW +14V P6301-18
19 GND P6301-19
5 4 3 2 1
A B C D E F G H

UNLESS OTHERWISE SPECIFIED:
SWITCHES IS EVQ21309K AND
WATTAGE OF RESISTORS IS 1/10W.

VJBS6023

RCUIT BOARD LAYOUT NOTES.
TIC SECTION.


TO MAIN IV
F-
82
UNSW -30V
30
S5520
346 47 1/4W
/6.3V
TO MAIN I
IR DATA
27
SERIAL CLOCK
89
SERIAL DATA 0
88
SERIAL DATA 1
92
TP6301
TO MAIN II
VIDEO 2
87
AUDIO 2 R CH
84
AUDIO -5V
21
TO MAIN III
AUDIO 2 R CH
83
AUDIO 2 L CH
69
Z
J6350
TO MAIN IV
UNSW +5V (VIDEO)
86
P6001
TO OPERATION
G
1 AUDIO 2 L CH P6301- 1
2 AUDIO -5V P6301- 2
3 UNSW +5V (VIDEO) P6301- 3
4 AUDIO 2 R CH P6301- 4
5 GND P6301- 5
6 VIDEO 2 P6301- 6
14 CATV SCK P6301-14
12 SCAN 2 P6301-12
10 SCAN 1 P6301-10
8 SCAN 0 P6301- 8
13 KEY DATA 3 P6301-13
7 KEY DATA 2 P6301- 7
9 SCAN 0 P6301- 9
11 KEY DATA1 P6301-11
15 CATV DATA P6301-15
16 CATV CS (L) P6301-16
17 UNSW +5V (SYS.CTL) P6301-17
18 UNSW +14V P6301-18
19 GND P6301-19
VJBS6023

SS OTHERWISE SPECIFIED:
CHES IS EVQ21309K AND
AGE OF RESISTORS IS 1/10W.

G
H

MAIN V VOLTAGE CHART

MODE PIN NO.	REC	PLAY
IC6301		
1	---	---
2	---	---
3	-26.5	-26.5
4	-26.5	-26.5
5	-26.5	-26.5
6	-26.5	-26.5
7	---	---
8	---	---
9	5.2	5.2
10	5.2	5.2
11	5.2	5.2
12	5.2	5.2
13	2.3	2.3
14	2.6	2.5
15	5.1	5.1
16	0	0
17	---	---
18	2.0	1.9
19	2.0	1.8
20	2.1	2.1
21	---	---
22	1.3	1.3
23	---	---
24	0	4.7
25	5.1	5.2
26	4.7	4.7
27	---	---
28	---	---
29	-31.0	5.0
30	---	---
31	---	---
32	---	---
33	-18.0	-21.9
34	-26.3	-18.0
35	-30.5	-21.7
36	-21.8	-21.6
37	-17.5	-17.5
38	-17.5	-13.5
39	5.2	5.2
40	-31.0	-31.0
41	-21.7	-17.2
42	-26.1	-30.5
43	-26.0	-30.5
44	-21.7	-30.5
TP6301	5.2	5.2

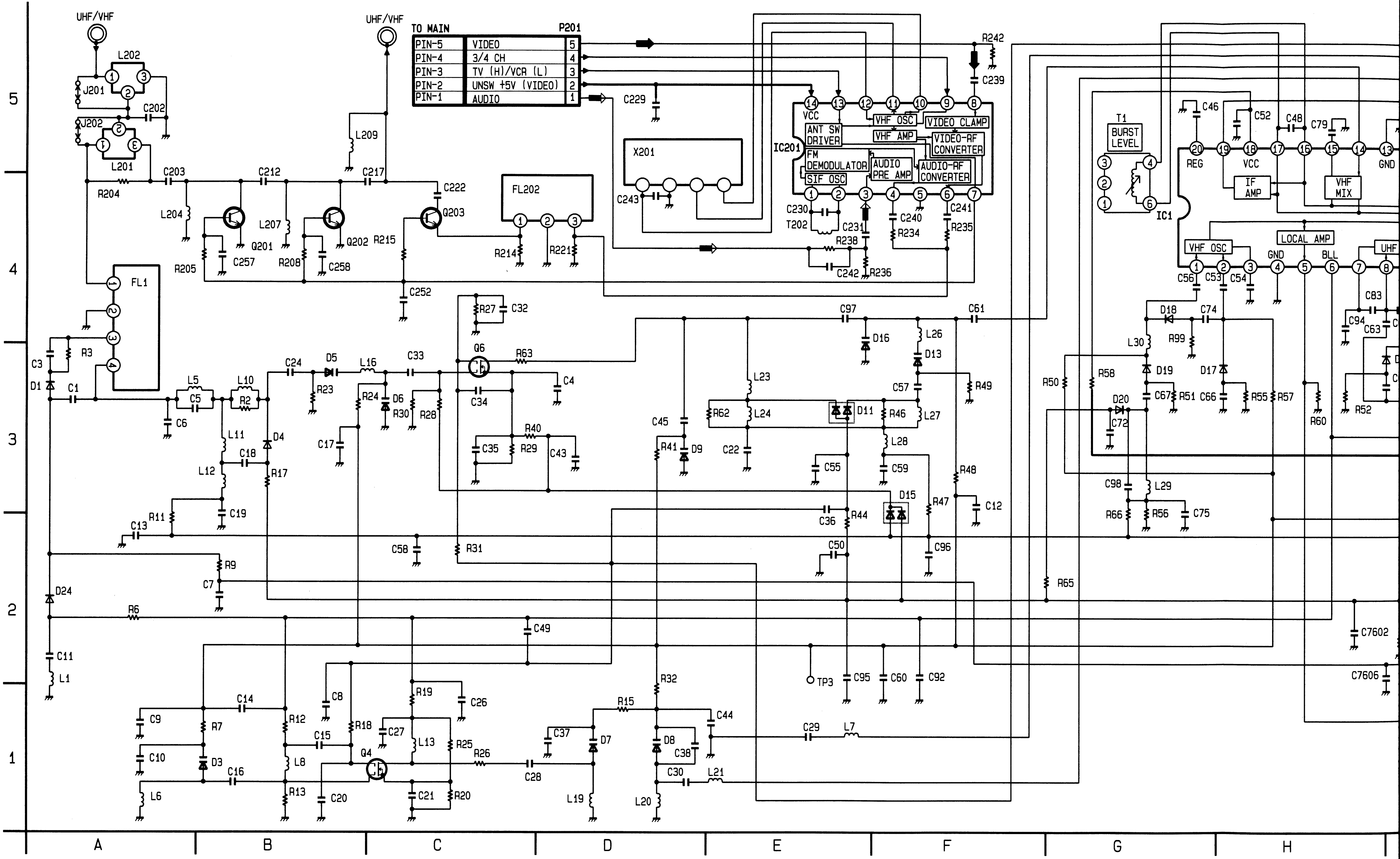
COMPARISON CHART OF MODELS & MARKS

MODEL	MARK
VHQ720	A
PV-7400	B
PV-7401	C
PV-7401-K	D
VHQ740	E
PV-7450	F
PV-7451	G
VHQ760	H
Not Used	Z

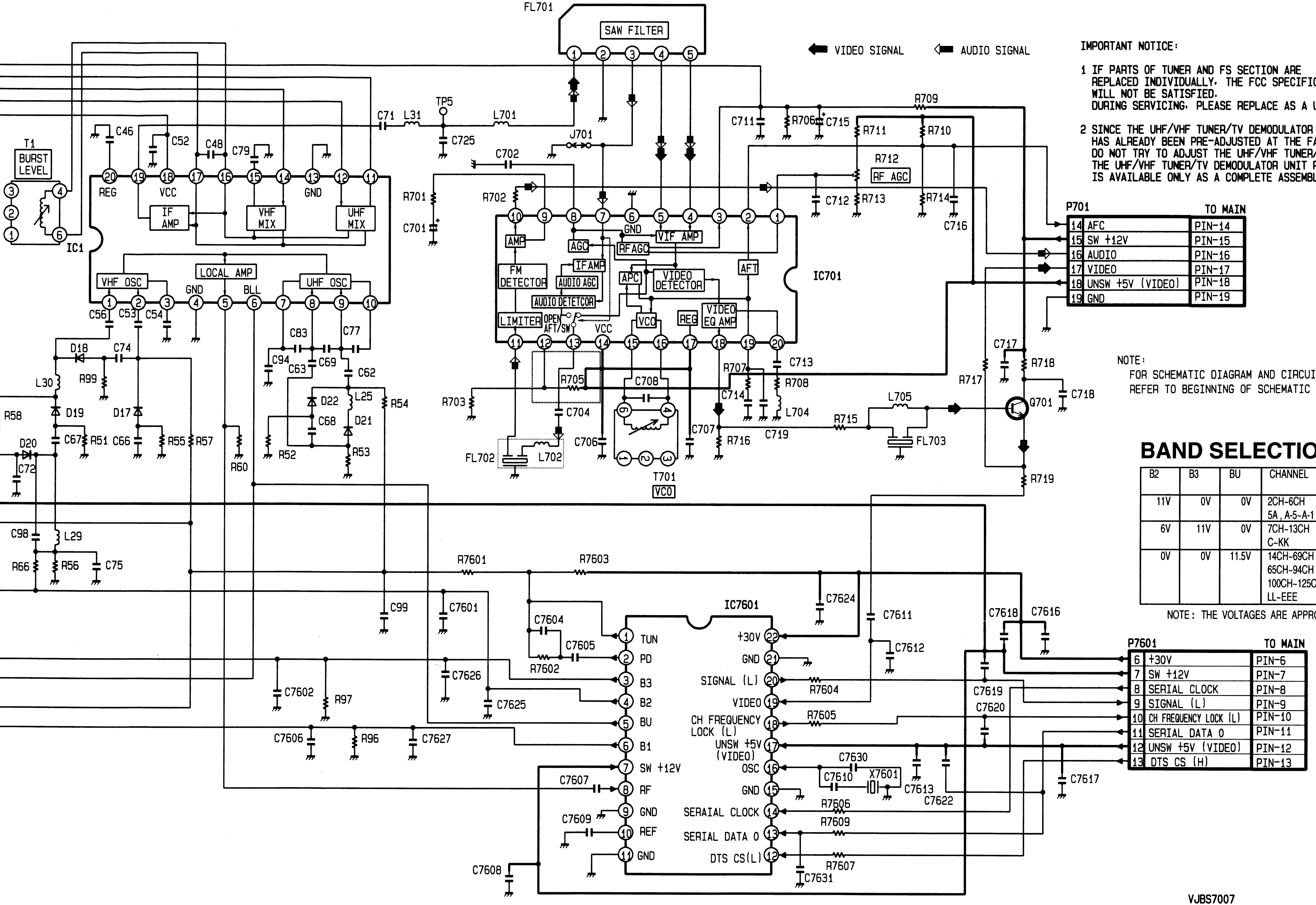
—MEMO—

UHF/VHF TUNER/TV DEMODULATOR SCHEMATIC DIAGRAM

"FOR REFERENCE ON


UHF/VHF
L202
J201
C202
J202
L201
R204
C203
L204
Q201
C257
R205
C212
L207
Q202
C258
R208
L209
C217
UHF/VHF
R215
C222
Q203
C252
FL202
R214
R221
TO MAIN
P201
PIN-5 VIDEO 5
PIN-4 3/4 CH 4
PIN-3 TV (H)/VCR (L) 3
PIN-2 UNSW +5V (VIDEO) 2
PIN-1 AUDIO 1
C229
X201
C243
IC201
VCC
ANT SW DRIVER
VHF OSC
VHF AMP
VIDEO CLAMP
VIDEO-RF CONVERTER
FM DEMODULATOR
SIF OSC
AUDIO PRE AMP
AUDIO-RF CONVERTER
R242
C239
C230
T202
C231
R238
C240
R234
C241
R235
C242
R236
FL1
C3
R3
D1
C1
C6
L5
C5
L10
R2
L11
L12
C18
C19
R11
C13
D4
R17
C24
D5
R23
L16
R24
D6
R30
C17
C33
R28
Q6
R27
C32
R63
C4
C34
R40
C35
R29
C43
C58
R31
R9
C7
D24
R6
C11
L1
C49
C9
R7
C10
D3
L6
C14
R12
C16
C15
L8
R13
C8
R18
C20
Q4
C27
R19
C26
L13
R25
R26
C28
C21
R20
C37
D7
L19
R15
R32
C44
D8
C38
C30
L21
L20
C29
L7
C45
R41
D9
C97
D16
C22
L23
R62
L24
D11
R46
L27
L26
D13
C57
R49
L28
C55
C59
C36
R44
D15
R47
C50
C96
C61
R48
C12
TP3
C95
C60
C92
R65
R50
R58
T1
BURST LEVEL
IC1
C46
C52
C48
C79
REG
VCC
IF AMP
VHF MIX
GND
VHF OSC
LOCAL AMP
GND
BLL
UHF
C56
C53
C54
D18
C74
R99
L30
D19
D17
C67
R51
C66
R55
R57
D20
C72
C83
C94
C63
R52
R60
C98
L29
R66
R56
C75
C7602
C7606
A
B
C
D
E
F
G
H
1
2
3
4
5

"FOR REFERENCE ONLY"


FL701
SAW FILTER
VIDEO SIGNAL
AUDIO SIGNAL
T1
BURST LEVEL
IC1
REG
VCC
GND
IF AMP
VHF MIX
UHF MIX
LOCAL AMP
VHF OSC
UHF OSC
BLL
C46
C52
C48
C79
C71
L31
TP5
C725
L701
J701
C702
C56
C53
C54
C74
D18
R99
L30
R58
D19
D17
D20
C72
C67
R51
C66
R55
R57
R60
C83
C77
C94
C63
C69
C62
D22
L25
R54
C68
D21
R52
R53
C98
L29
R66
R56
C75
R701
C701
R702
AMP
AGC
RF AGC
GND
VIF AMP
FM DETECTOR
IF AMP
AUDIO AGC
AUDIO DETETCOR
APC
VIDEO DETECTOR
AFT
LIMITER
OPEN AFT/SW
VCC
VCO
REG
VIDEO EQ AMP
IC701
C711
R706
C715
R709
R711
R710
R712
RF AGC
C712
R713
R714
C716
R703
R705
C704
C708
C706
T701
VCO
FL702
L702
C707
R716
R707
C714
C713
R708
L704
C719
R715
L705
FL703
R717
C717
R718
C718
Q701
R719
P701
TO MAIN
14 AFC PIN-14
15 SW +12V PIN-15
16 AUDIO PIN-16
17 VIDEO PIN-17
18 UNSW +5V (VIDEO) PIN-18
19 GND PIN-19
R7601
R7603
C99
C7601
C7624
C7611
C7612
IC7601
C7604
C7605
R7602
C7626
C7602
R97
C7625
C7606
R96
C7627
C7607
C7609
C7608
TUN
PD
B3
B2
BU
B1
SW +12V
RF
GND
REF
GND
+30V
GND
SIGNAL (L)
VIDEO
CH FREQUENCY LOCK (L)
UNSW +5V (VIDEO)
OSC
GND
SERAIAL CLOCK
SERIAL DATA 0
DTS CS(L)
R7604
R7605
C7630
C7610
X7601
C7613
C7622
R7606
R7609
R7607
C7631
C7618
C7616
C7619
C7620
C7617
P7601
TO MAIN
6 +30V PIN-6
7 SW +12V PIN-7
8 SERIAL CLOCK PIN-8
9 SIGNAL (L) PIN-9
10 CH FREQUENCY LOCK (L) PIN-10
11 SERIAL DATA 0 PIN-11
12 UNSW +5V (VIDEO) PIN-12
13 DTS CS (H) PIN-13
VJBS7007

IMPORTANT NOTICE:

1 IF PARTS OF TUNER AND FS SECTION ARE REPLACED INDIVIDUALLY, THE FCC SPECIFICATIONS WILL NOT BE SATISFIED. DURING SERVICING, PLEASE REPLACE AS A UNIT.

2 SINCE THE UHF/VHF TUNER/TV DEMODULATOR UNIT HAS ALREADY BEEN PRE-ADJUSTED AT THE FACTORY, DO NOT TRY TO ADJUST THE UHF/VHF TUNER/TV DEMODULATOR UNIT. THE UHF/VHF TUNER/TV DEMODULATOR UNIT REPLACEMENT PART IS AVAILABLE ONLY AS A COMPLETE ASSEMBLY UNIT.

NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES, REFER TO BEGINNING OF SCHEMATIC SECTION.

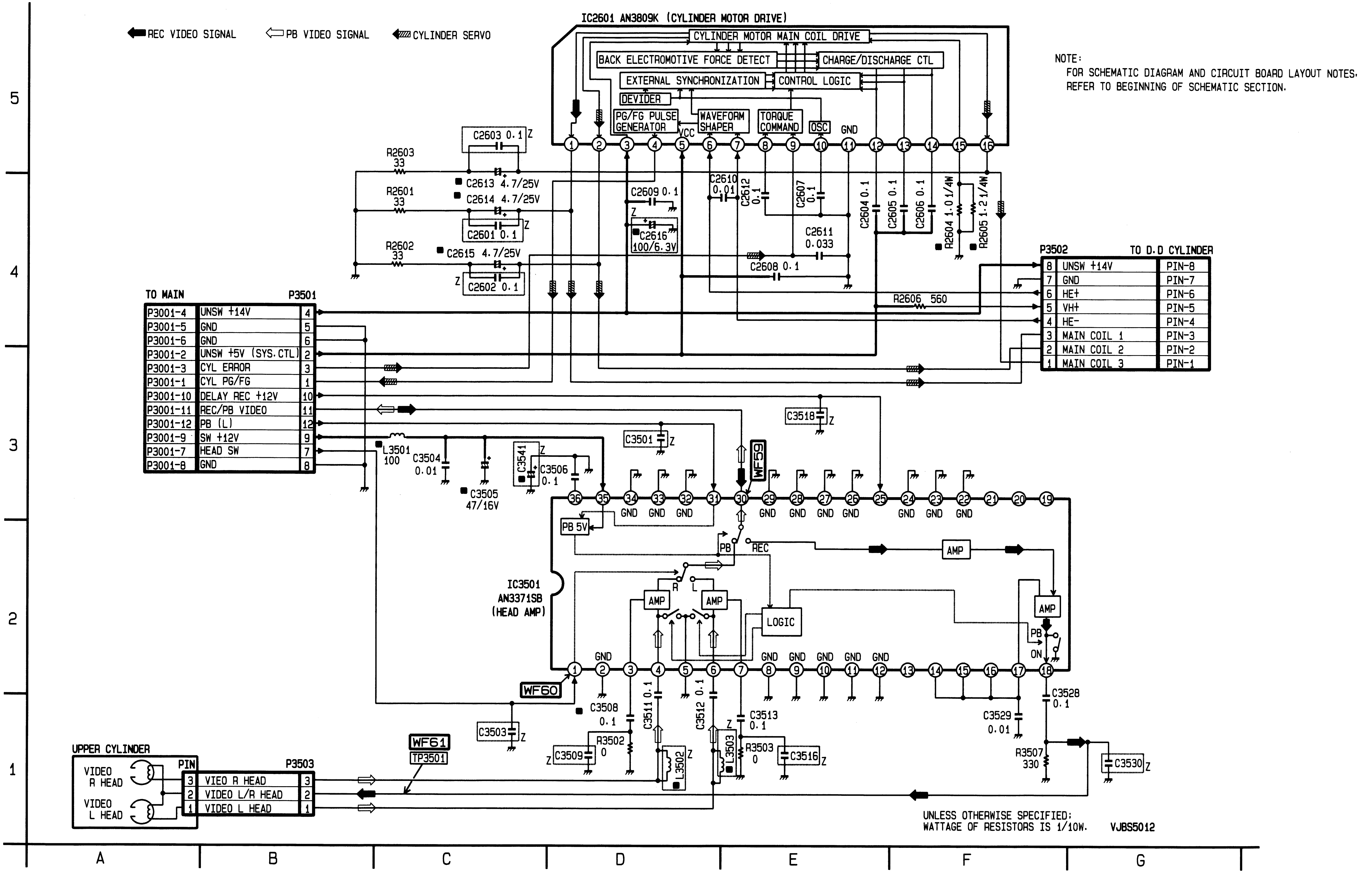
BAND SELECTION CHART

B2	B3	BU	CHANNEL
11V	0V	0V	2CH~6CH 5A, A-5~A-1, A, B
6V	11V	0V	7CH~13CH C~KK
0V	0V	11.5V	14CH~69CH 65CH~94CH (CATV) 100CH~125CH (CATV) LL~EEE

NOTE: THE VOLTAGES ARE APPROXIMATE.

G	H	I	J	K	L	M	N

HEAD AMP SCHEMATIC DIAGRAM (A)



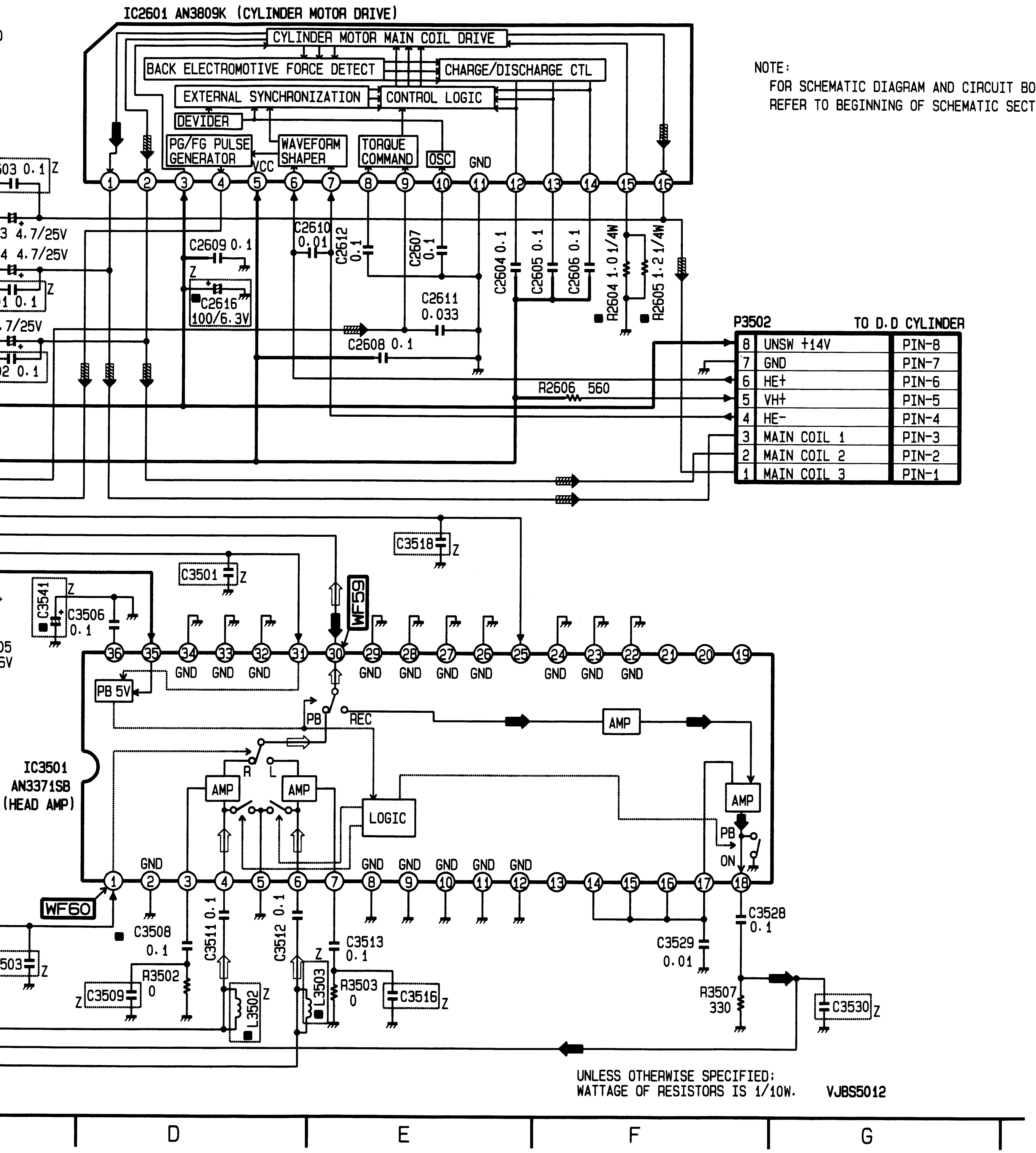
REC VIDEO SIGNAL
PB VIDEO SIGNAL
CYLINDER SERVO
IC2601 AN3809K (CYLINDER MOTOR DRIVE)
CYLINDER MOTOR MAIN COIL DRIVE
BACK ELECTROMOTIVE FORCE DETECT
CHARGE/DISCHARGE CTL
EXTERNAL SYNCHRONIZATION
CONTROL LOGIC
DEVIDER
PG/FG PULSE GENERATOR
WAVEFORM SHAPER
TORQUE COMMAND
OSC
VCC
GND
C2603 0.1 Z
R2603 33
R2601 33
R2602 33
C2613 4.7/25V
C2614 4.7/25V
C2601 0.1 Z
C2615 4.7/25V
C2602 0.1 Z
C2609 0.1
C2616 100/6.3V Z
C2610 0.01
C2612 0.1
C2607 0.1
C2611 0.033
C2608 0.1
C2604 0.1
C2605 0.1
C2606 0.1
R2604 1.0 1/4W
R2605 1.2 1/4W
R2606 560
P3502
TO D.D CYLINDER
8 UNSW +14V PIN-8
7 GND PIN-7
6 HE+ PIN-6
5 VH+ PIN-5
4 HE- PIN-4
3 MAIN COIL 1 PIN-3
2 MAIN COIL 2 PIN-2
1 MAIN COIL 3 PIN-1
TO MAIN
P3501
P3001-4 UNSW +14V 4
P3001-5 GND 5
P3001-6 GND 6
P3001-2 UNSW +5V (SYS.CTL) 2
P3001-3 CYL ERROR 3
P3001-1 CYL PG/FG 1
P3001-10 DELAY REC +12V 10
P3001-11 REC/PB VIDEO 11
P3001-12 PB (L) 12
P3001-9 SW +12V 9
P3001-7 HEAD SW 7
P3001-8 GND 8
L3501 100
C3504 0.01
C3505 47/16V
C3541 Z
C3506 0.1
C3501 Z
C3518 Z
WF59
WF60
WF61
TP3501
PB 5V
PB
REC
AMP
R
L
LOGIC
PB
ON
IC3501 AN3371SB (HEAD AMP)
C3503 Z
C3508 0.1
R3502 0
C3509 Z
C3511 0.1
L3502 Z
C3512 0.1
L3503 Z
C3513 0.1
R3503 0
C3516 Z
C3529 0.01
C3528 0.1
R3507 330
C3530 Z
UPPER CYLINDER
VIDEO R HEAD
VIDEO L HEAD
PIN
P3503
3 VIEO R HEAD 3
2 VIDEO L/R HEAD 2
1 VIDEO L HEAD 1
A
B
C
D
E
F
G
1
2
3
4
5

NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES, REFER TO BEGINNING OF SCHEMATIC SECTION.

UNLESS OTHERWISE SPECIFIED:
WATTAGE OF RESISTORS IS 1/10W.

VJBS5012

NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES,
REFER TO BEGINNING OF SCHEMATIC SECTION.



IC2601 AN3809K (CYLINDER MOTOR DRIVE)
CYLINDER MOTOR MAIN COIL DRIVE
BACK ELECTROMOTIVE FORCE DETECT
CHARGE/DISCHARGE CTL
EXTERNAL SYNCHRONIZATION
CONTROL LOGIC
DEVIDER
PG/FG PULSE GENERATOR
WAVEFORM SHAPER
TORQUE COMMAND
OSC
VCC
GND
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16
03 0.1 Z
3 4.7/25V
4 4.7/25V
1 0.1 Z
.7/25V
2 0.1
C2609 0.1
Z
C2616 100/6.3V
C2610 0.01
C2612 0.1
C2607 0.1
C2604 0.1
C2605 0.1
C2606 0.1
R2604 1.0 1/4W
R2605 1.2 1/4W
C2611 0.033
C2608 0.1
R2606 560
P3502
TO D.D CYLINDER
8 UNSW +14V PIN-8
7 GND PIN-7
6 HE+ PIN-6
5 VH+ PIN-5
4 HE- PIN-4
3 MAIN COIL 1 PIN-3
2 MAIN COIL 2 PIN-2
1 MAIN COIL 3 PIN-1
C3518 Z
C3501 Z
C3541 Z
C3506 0.1
05
5V
WF59
36 35 34 33 32 31 30 29 28 27 26 25 24 23 22 21 20 19
GND GND GND
GND GND GND GND
GND GND GND
PB 5V
PB
REC
AMP
R L
AMP AMP
LOGIC
AMP
PB
ON
IC3501
AN3371SB
(HEAD AMP)
GND
GND GND GND GND GND
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18
WF60
C3508 0.1
503 Z
Z C3509
R3502 0
C3511 0.1
L3502 Z
C3512 0.1
Z L3503
C3513 0.1
R3503 0
C3516 Z
C3529 0.01
C3528 0.1
R3507 330
C3530 Z
D
E
F
G

UNLESS OTHERWISE SPECIFIED:
WATTAGE OF RESISTORS IS 1/10W.   VJBS5012

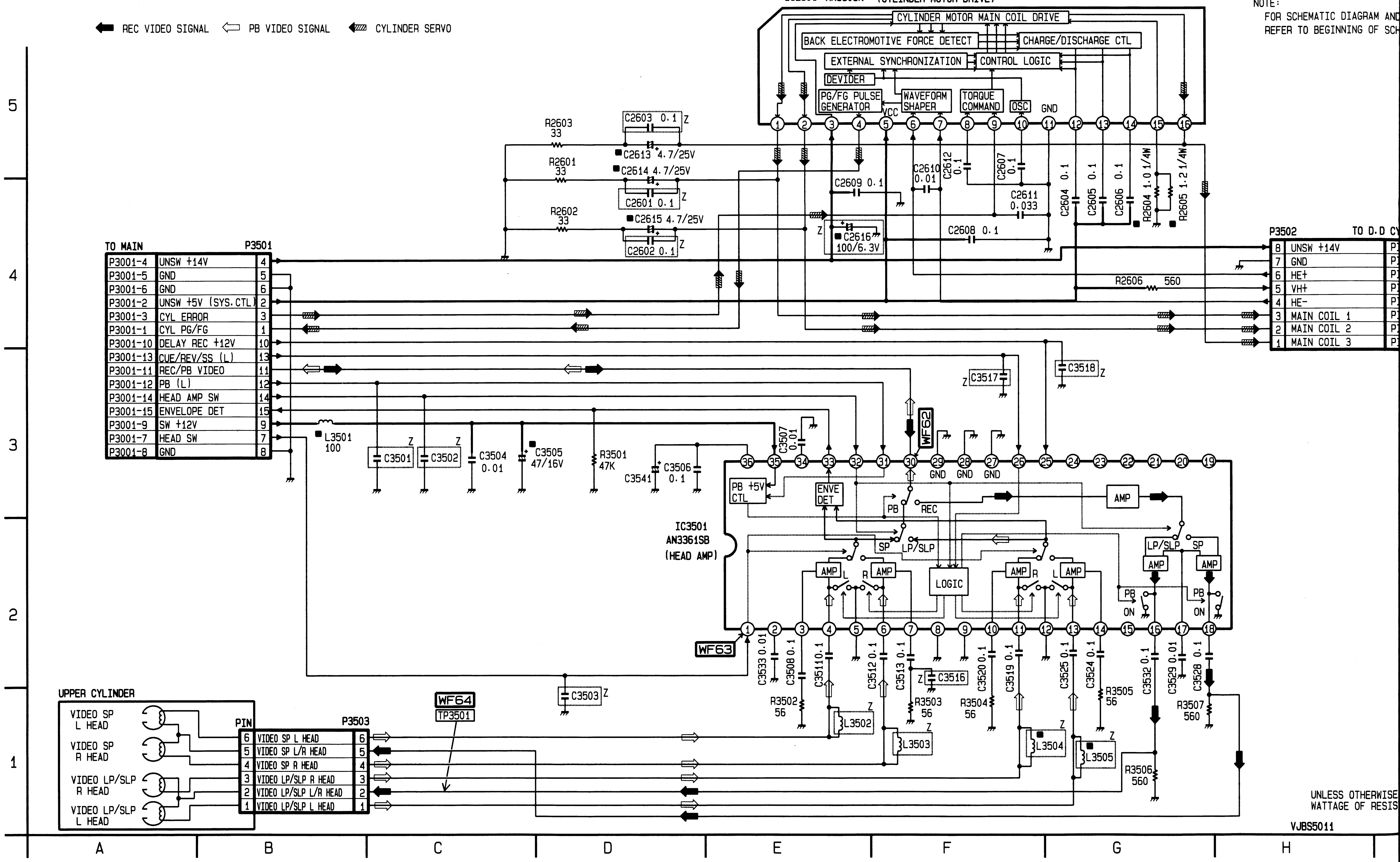
HEAD AMP VOLTAGE CHART

MODE / PIN NO.	STOP	REC	PLAY	FF	REW
IC2601					
1	13.0	13.0	13.0	13.0	13.0
2	13.0	13.0	13.0	13.0	13.0
3	13.5	13.5	13.5	13.5	13.5
4	1.2	1.2	1.2	1.2	1.2
5	5.1	5.1	5.1	5.1	5.1
6	0.9	0.9	0.9	0.9	0.9
7	1.0	1.0	1.0	1.0	1.0
8	0.7	0.7	0.7	0.7	0.7
9	2.6	2.6	2.6	2.6	2.6
10	1.5	1.5	1.5	1.5	1.5
11	0	0	0	0	0
12	3.9	3.9	3.9	3.9	3.9
13	3.9	3.9	3.9	3.9	3.9
14	3.9	3.9	3.9	3.9	3.9
15	0.1	0.1	0.1	0.1	0.1
16	13.2	13.2	13.2	13.2	13.2
IC3501					
1	2.6	2.6	2.6	2.6	2.6
2	0	0	4.2	0	0
3	0.3	0.3	1.4	0.3	0.3
4	0	0	0.7	0	0
5	0	0	0	0	0
6	0	0	0.7	0	0
7	0.2	0.2	1.4	0.2	0.2
8	0	0	0	0	0
9	0	0	0	0	0
10	0.2	0.2	2.2	0.2	0.2
11	0	0	0	0	0
12	0	0	0	0	0
13	---	---	---	---	---
14	0.2	0.2	2.2	0.2	0.2
15	---	---	---	---	---
16	0	6.3	0	0	0
17	0	6.3	0	0	0
18	0	6.3	0	0	0
19	---	---	---	---	---
20	---	---	---	---	---
21	---	---	---	---	---
22	0	0	0	0	0
23	0	0	0	0	0
24	0	0	0	0	0
25	0.5	11.9	0.5	0.5	0.5
26	0	0	0	0	0
27	0	0	0	0	0
28	0	0	0	0	0
29	0	0	0	0	0
30	2.7	2.7	2.3	2.7	2.7
31	5.1	5.1	0.1	5.1	5.1
32	0	0	0	0	0
33	0	0	0	0.2	0.2
34	0	0	0	0	0
35	12.0	12.0	12.0	12.0	12.0
36	0.1	0.1	5.0	0.1	0.1
TP3501	0	0	0	0	0

COMPARISON CHART OF MODELS & MARKS

MODEL	MARK
VHQ720	A
PV-7400	B
PV-7401	C
PV-7401-K	D
VHQ740	E
PV-7450	F
PV-7451	G
VHQ760	H
Not Used	Z

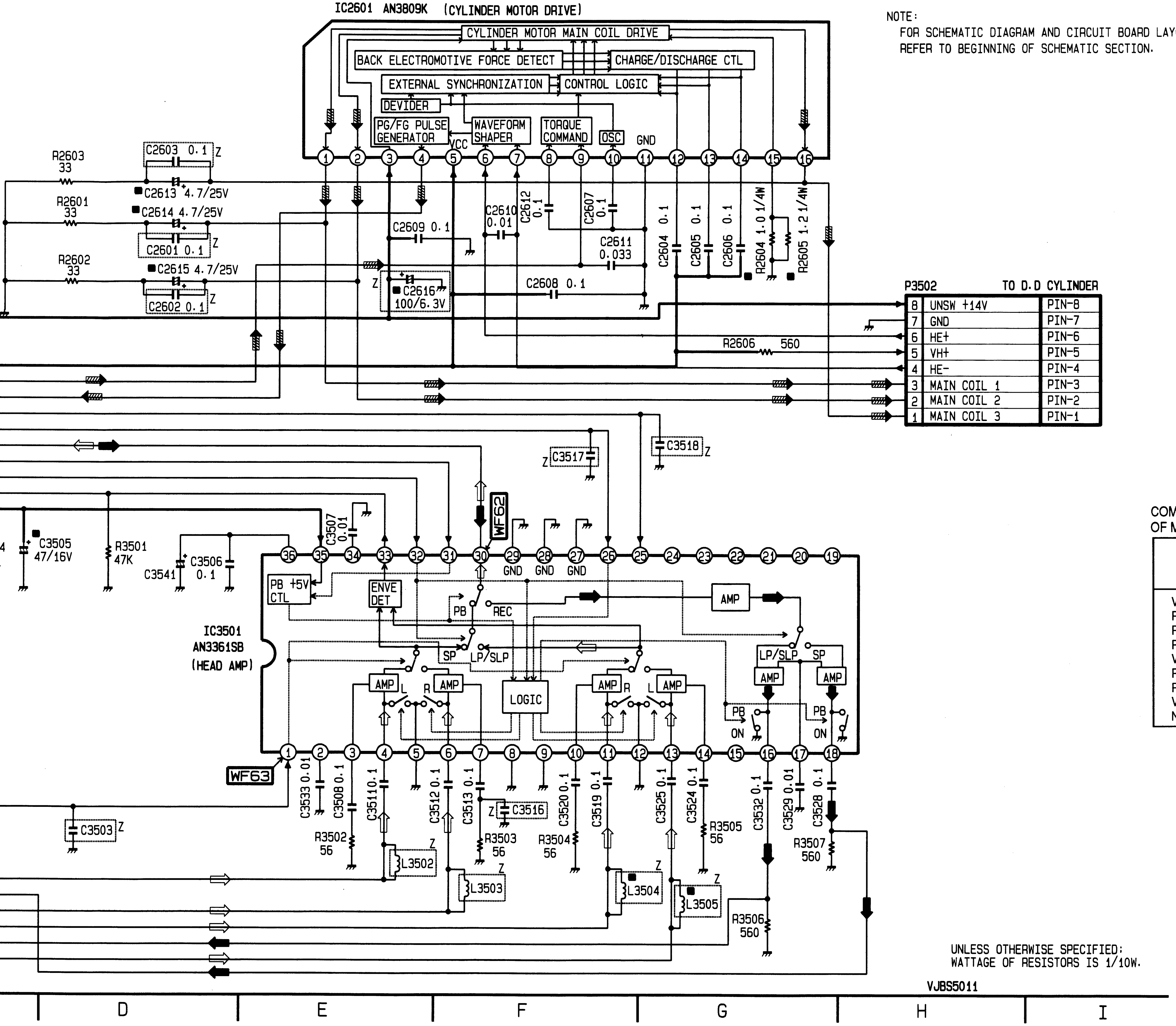
HEAD AMP SCHEMATIC DIAGRAM (B,C,D,E)


REC VIDEO SIGNAL
PB VIDEO SIGNAL
CYLINDER SERVO
IC2601 AN3809K (CYLINDER MOTOR DRIVE)
CYLINDER MOTOR MAIN COIL DRIVE
BACK ELECTROMOTIVE FORCE DETECT
CHARGE/DISCHARGE CTL
EXTERNAL SYNCHRONIZATION
CONTROL LOGIC
DEVIDER
PG/FG PULSE GENERATOR
VCC
WAVEFORM SHAPER
TORQUE COMMAND
OSC
GND
R2603 33
R2601 33
R2602 33
C2603 0.1 Z
C2613 4.7/25V
C2614 4.7/25V
C2601 0.1 Z
C2615 4.7/25V
C2602 0.1 Z
C2609 0.1
C2610 0.01
C2612 0.1
C2607 0.1
C2611 0.033
C2616 100/6.3V
C2608 0.1
C2604 0.1
C2605 0.1
C2606 0.1
R2604 1.0 1/4W
R2605 1.2 1/4W
R2606 560
TO MAIN
P3501
P3001-4 UNSW +14V 4
P3001-5 GND 5
P3001-6 GND 6
P3001-2 UNSW +5V (SYS.CTL) 2
P3001-3 CYL ERROR 3
P3001-1 CYL PG/FG 1
P3001-10 DELAY REC +12V 10
P3001-13 CUE/REV/SS (L) 13
P3001-11 REC/PB VIDEO 11
P3001-12 PB (L) 12
P3001-14 HEAD AMP SW 14
P3001-15 ENVELOPE DET 15
P3001-9 SW +12V 9
P3001-7 HEAD SW 7
P3001-8 GND 8
P3502
TO D.D CY
8 UNSW +14V
7 GND
6 HE+
5 VH+
4 HE-
3 MAIN COIL 1
2 MAIN COIL 2
1 MAIN COIL 3
L3501 100
C3501
C3502
C3504 0.01
C3505 47/16V
R3501 47K
C3541
C3506 0.1
C3507 0.01
C3517 Z
C3518 Z
WF62
IC3501 AN3361SB (HEAD AMP)
PB +5V CTL
ENVE DET
PB
REC
SP
LP/SLP
AMP
L
R
LOGIC
PB ON
GND
WF63
C3533 0.01
C3508 0.1
C3511 0.1
C3512 0.1
C3513 0.1
C3516 Z
C3520 0.1
C3519 0.1
C3525 0.1
C3524 0.1
C3532 0.1
C3529 0.01
C3528 0.1
R3502 56
R3503 56
R3504 56
R3505 56
R3506 560
R3507 560
L3502 Z
L3503 Z
L3504 Z
L3505 Z
C3503 Z
WF64
TP3501
UPPER CYLINDER
VIDEO SP L HEAD
VIDEO SP R HEAD
VIDEO LP/SLP R HEAD
VIDEO LP/SLP L HEAD
PIN
P3503
6 VIDEO SP L HEAD 6
5 VIDEO SP L/R HEAD 5
4 VIDEO SP R HEAD 4
3 VIDEO LP/SLP R HEAD 3
2 VIDEO LP/SLP L/R HEAD 2
1 VIDEO LP/SLP L HEAD 1
VJBS5011
1
2
3
4
5
A
B
C
D
E
F
G
H

NOTE:
FOR SCHEMATIC DIAGRAM AND
REFER TO BEGINNING OF SCH

UNLESS OTHERWISE
WATTAGE OF RESIS

NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES, REFER TO BEGINNING OF SCHEMATIC SECTION.


IC2601 AN3809K (CYLINDER MOTOR DRIVE)
CYLINDER MOTOR MAIN COIL DRIVE
BACK ELECTROMOTIVE FORCE DETECT
CHARGE/DISCHARGE CTL
EXTERNAL SYNCHRONIZATION
CONTROL LOGIC
DEVIDER
PG/FG PULSE GENERATOR
WAVEFORM SHAPER
TORQUE COMMAND
OSC
VCC
GND
R2603 33
R2601 33
R2602 33
C2603 0.1 Z
C2613 4.7/25V
C2614 4.7/25V
C2601 0.1 Z
C2615 4.7/25V
C2602 0.1 Z
C2616 100/6.3V Z
C2609 0.1
C2610 0.01
C2612 0.1
C2607 0.1
C2611 0.033
C2608 0.1
C2604 0.1
C2605 0.1
C2606 0.1
R2604 1.0 1/4W
R2605 1.2 1/4W
R2606 560
P3502
TO D.D CYLINDER
8 UNSW +14V PIN-8
7 GND PIN-7
6 HE+ PIN-6
5 VH+ PIN-5
4 HE- PIN-4
3 MAIN COIL 1 PIN-3
2 MAIN COIL 2 PIN-2
1 MAIN COIL 3 PIN-1
C3517 Z
C3518 Z
WF62
C3507 0.01
C3505 47/16V
R3501 47K
C3541
C3506 0.1
GND
IC3501 AN3361SB (HEAD AMP)
PB +5V CTL
ENVE DET
PB
REC
AMP
SP
LP/SLP
LOGIC
AMP
L
R
ON
WF63
C3533 0.01
C3508 0.1
C3511 0.1
C3512 0.1
C3513 0.1
C3516 Z
C3520 0.1
C3519 0.1
C3525 0.1
C3524 0.1
C3532 0.1
C3529 0.01
C3528 0.1
C3503 Z
R3502 56
R3503 56
R3504 56
R3505 56
R3506 560
R3507 560
L3502 Z
L3503 Z
L3504 Z
L3505 Z
D
E
F
G
H
I

UNLESS OTHERWISE SPECIFIED:
WATTAGE OF RESISTORS IS 1/10W.

VJBS5011

HEAD AMP VOLTAGE CHART

MODE / PIN NO.	STOP	REC	PLAY	FF	REW
IC2601					
1	13.0	13.0	13.0	13.0	13.0
2	13.0	13.0	13.0	13.0	13.0
3	13.5	13.5	13.5	13.5	13.5
4	1.2	1.2	1.2	1.2	1.2
5	5.1	5.1	5.1	5.1	5.1
6	0.9	0.9	0.9	0.9	0.9
7	1.0	1.0	1.0	1.0	1.0
8	0.7	0.7	0.7	0.7	0.7
9	2.6	2.6	2.6	2.6	2.6
10	1.5	1.5	1.5	1.5	1.5
11	0	0	0	0	0
12	3.9	3.9	3.9	3.9	3.9
13	3.9	3.9	3.9	3.9	3.9
14	3.9	3.9	3.9	3.9	3.9
15	0.1	0.1	0.1	0.1	0.1
16	13.2	13.2	13.2	13.2	13.2
IC3501					
1	2.6	2.6	2.6	2.6	2.6
2	0	0	4.2	0	0
3	0.3	0.3	1.4	0.3	0.3
4	0	0	0.7	0	0
5	0	0	0	0	0
6	0	0	0.7	0	0
7	0.2	0.2	1.4	0.2	0.2
8	0	0	0	0	0
9	0	0	0	0	0
10	0.2	0.2	2.2	0.2	0.2
11	0	0	0	0	0
12	0	0	0	0	0
13	0	0	0	0	0
14	0.2	0.2	2.2	0.2	0.2
15	---	---	---	---	---
16	0	6.3	0	0	0
17	0	6.3	0	0	0
18	0	6.3	0	0	0
19	---	---	---	---	---
20	---	---	---	---	---
21	---	---	---	---	---
22	---	---	---	---	---
23	---	---	---	---	---
24	---	---	---	---	---
25	0.5	11.9	0.5	0.5	0.5
26	5.0	5.0	5.0	5.0	5.0
27	0	0	0	0	0
28	0	0	0	0	0
29	0	0	0	0	0
30	2.7	2.7	2.3	2.7	2.7
31	5.1	5.1	0.1	5.1	5.1
32	0.1	01	0.1	0.1	0.1
33	0	0	0	0.2	0.2
34	0.1	0.1	0.7	0.1	0.1
35	12.0	12.0	12.0	12.0	12.0
36	0.1	0.1	5.0	0.1	0.1
TP3501	0	0	0	0	0

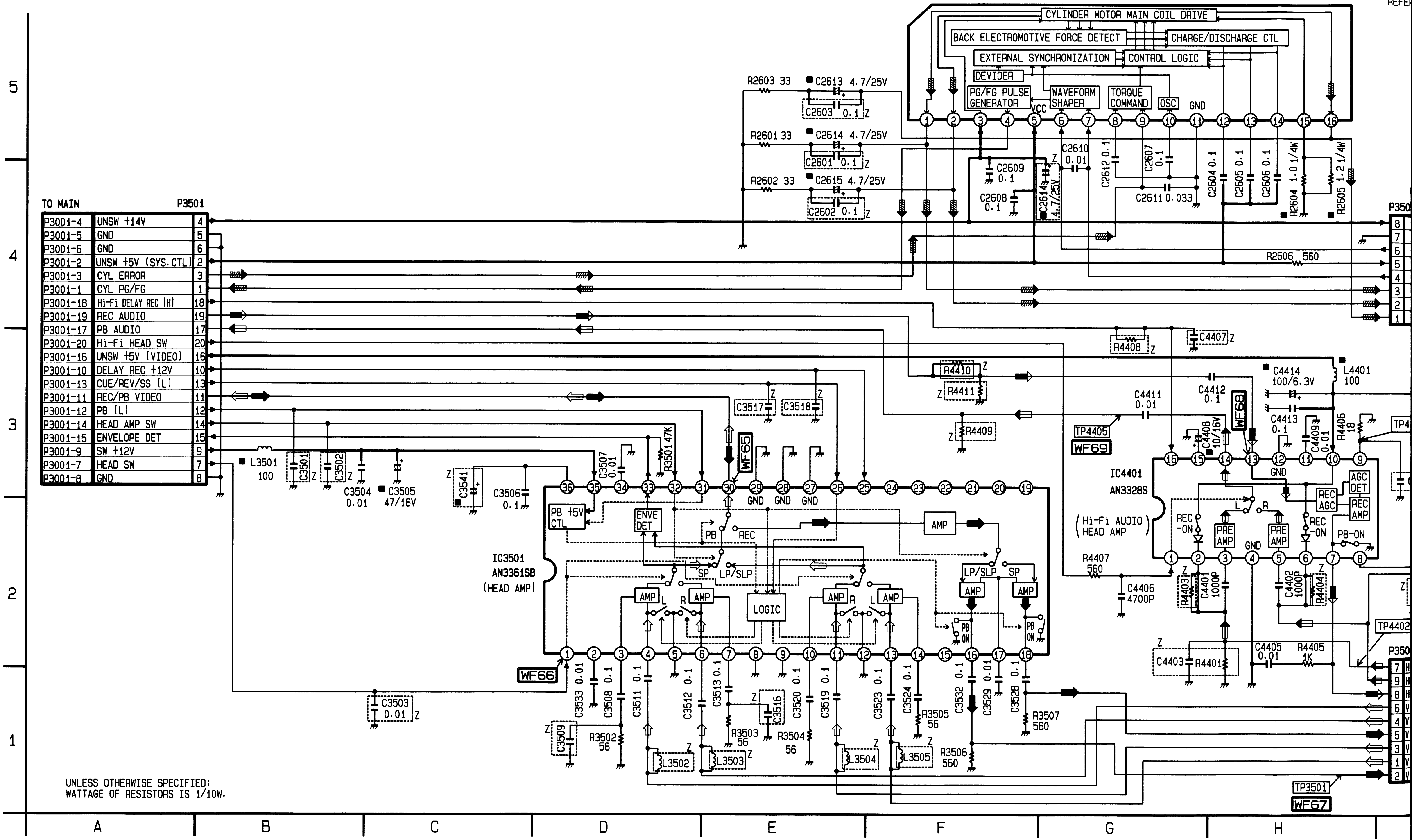
COMPARISON CHART OF MODELS & MARKS

MODEL	MARK
VHQ720	A
PV-7400	B
PV-7401	C
PV-7401-K	D
VHQ740	E
PV-7450	F
PV-7451	G
VHQ760	H
Not Used	Z

Hi-Fi AUDIO/VIDEO HEAD AMP SCHEMATIC DIAGRAM (F,G,H)

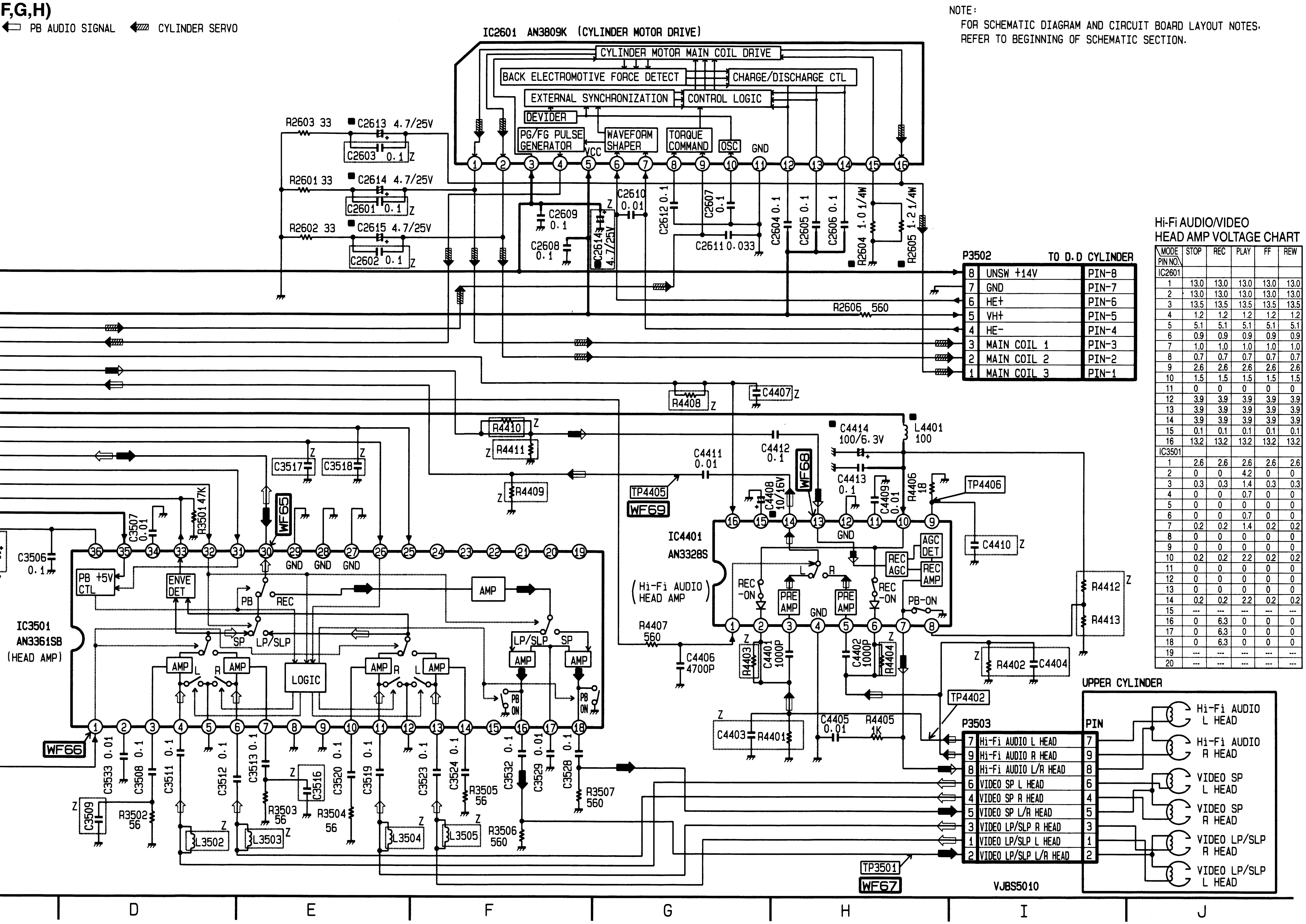
REC VIDEO SIGNAL PB VIDEO SIGNAL REC AUDIO SIGNAL PB AUDIO SIGNAL CYLINDER SERVO

NOTE:
FOR
REFER



IC2601 AN3809K (CYLINDER MOTOR DRIVE)
CYLINDER MOTOR MAIN COIL DRIVE
BACK ELECTROMOTIVE FORCE DETECT
CHARGE/DISCHARGE CTL
EXTERNAL SYNCHRONIZATION
CONTROL LOGIC
DEVIDER
PG/FG PULSE GENERATOR
WAVEFORM SHAPER
TORQUE COMMAND
OSC
VCC
GND
R2603 33
C2613 4.7/25V
C2603 0.1 Z
R2601 33
C2614 4.7/25V
C2601 0.1 Z
R2602 33
C2615 4.7/25V
C2602 0.1 Z
C2609 0.1
C2608 0.1
C2614 4.7/25V
C2610 0.01
C2612 0.1
C2607 0.1
C2611 0.033
C2604 0.1
C2605 0.1
C2606 0.1
R2604 1.0 1/4W
R2605 1.2 1/4W
R2606 560
P3502
TO MAIN
P3501
P3001-4 UNSW +14V 4
P3001-5 GND 5
P3001-6 GND 6
P3001-2 UNSW +5V (SYS.CTL) 2
P3001-3 CYL ERROR 3
P3001-1 CYL PG/FG 1
P3001-18 Hi-Fi DELAY REC (H) 18
P3001-19 REC AUDIO 19
P3001-17 PB AUDIO 17
P3001-20 Hi-Fi HEAD SW 20
P3001-16 UNSW +5V (VIDEO) 16
P3001-10 DELAY REC +12V 10
P3001-13 CUE/REV/SS (L) 13
P3001-11 REC/PB VIDEO 11
P3001-12 PB (L) 12
P3001-14 HEAD AMP SW 14
P3001-15 ENVELOPE DET 15
P3001-9 SW +12V 9
P3001-7 HEAD SW 7
P3001-8 GND 8
L3501 100
C3501 Z
C3502 Z
C3504 0.01
C3505 47/16V
C3541 Z
C3506 0.1
C3507 0.01
R3501 47K
C3517 Z
C3518 Z
WF65
IC3501
AN3361SB
(HEAD AMP)
PB +5V CTL
ENVE DET
PB
REC
SP
LP/SLP
AMP
L
R
LOGIC
PB ON
GND
WF66
C3503 0.01 Z
C3533 0.01
C3508 0.1
C3511 0.1
C3512 0.1
C3513 0.1
C3516 Z
C3520 0.1
C3519 0.1
C3523 0.1
C3524 0.1
C3532 0.1
C3529 0.01
C3528 0.1
C3509 Z
R3502 56
R3503 56
R3504 56
R3505 56
R3506 560
R3507 560
L3502 Z
L3503 Z
L3504 Z
L3505 Z
R4410 Z
R4411 Z
R4409 Z
R4408 Z
C4407 Z
C4414 100/6.3V
L4401 100
C4411 0.01
C4412 0.1
C4413 0.1
C4409 0.01
C4408 10/16V
R4406 18
WF68
TP4405
WF69
IC4401
AN3328S
(Hi-Fi AUDIO HEAD AMP)
REC AGC
AGC DET
REC AMP
PRE AMP
REC -ON
PB-ON
R4407 560
C4406 4700P
R4403 Z
C4401 1000P
C4402 1000P
R4404
C4403 Z
R4401
C4405 0.01
R4405 1K
TP4402
TP3501
WF67
TP4
1 2 3 4 5
A B C D E F G H

UNLESS OTHERWISE SPECIFIED:
WATTAGE OF RESISTORS IS 1/10W.


F,G,H)
PB AUDIO SIGNAL
CYLINDER SERVO
IC2601 AN3809K (CYLINDER MOTOR DRIVE)
CYLINDER MOTOR MAIN COIL DRIVE
BACK ELECTROMOTIVE FORCE DETECT
CHARGE/DISCHARGE CTL
EXTERNAL SYNCHRONIZATION
CONTROL LOGIC
DEVIDER
PG/FG PULSE GENERATOR
WAVEFORM SHAPER
TORQUE COMMAND
OSC
VCC
GND
R2603 33
C2613 4.7/25V
C2603 0.1
R2601 33
C2614 4.7/25V
C2601 0.1
R2602 33
C2615 4.7/25V
C2602 0.1
C2609 0.1
C2608 0.1
C2614 4.7/25V
C2610 0.01
C2612 0.1
C2607 0.1
C2611 0.033
C2604 0.1
C2605 0.1
C2606 0.1
R2604 1.0 1/4W
R2605 1.2 1/4W
P3502
TO D.D CYLINDER
8 UNSW +14V PIN-8
7 GND PIN-7
6 HE+ PIN-6
5 VH+ PIN-5
4 HE- PIN-4
3 MAIN COIL 1 PIN-3
2 MAIN COIL 2 PIN-2
1 MAIN COIL 3 PIN-1
R2606 560
R4408
C4407
R4410
R4411
R4409
C4414 100/6.3V
L4401 100
C4411 0.01
C4412 0.1
C4413 0.1
TP4405
WF69
WF68
C4408 10/16V
C4409 0.01
R4406 18
TP4406
IC4401 AN3328S
(Hi-Fi AUDIO HEAD AMP)
REC AGC
AGC DET
REC AMP
REC -ON
PRE AMP
PB-ON
C4410
R4412
R4413
R4407 560
C4406 4700P
R4403
C4401 1000P
C4402 1000P
R4404
R4402
C4404
TP4402
C4403
R4401
C4405 0.01
R4405 1K
P3503
7 Hi-Fi AUDIO L HEAD
9 Hi-Fi AUDIO R HEAD
8 Hi-Fi AUDIO L/R HEAD
6 VIDEO SP L HEAD
4 VIDEO SP R HEAD
5 VIDEO SP L/R HEAD
3 VIDEO LP/SLP R HEAD
1 VIDEO LP/SLP L HEAD
2 VIDEO LP/SLP L/R HEAD
UPPER CYLINDER
PIN
Hi-Fi AUDIO L HEAD
Hi-Fi AUDIO R HEAD
VIDEO SP L HEAD
VIDEO SP R HEAD
VIDEO LP/SLP R HEAD
VIDEO LP/SLP L HEAD
TP3501
WF67
VJBS5010
C3517
C3518
R3501 47K
C3507 0.01
C3506 0.1
WF65
IC3501 AN3361SB (HEAD AMP)
PB +5V CTL
ENVE DET
PB
REC
SP
LP/SLP
AMP
LOGIC
PB ON
WF66
C3533 0.01
C3508 0.1
C3509
R3502 56
C3511 0.1
L3502
C3512 0.1
L3503
C3513 0.1
R3503 56
C3516
C3520 0.1
R3504 56
C3519 0.1
L3504
C3523 0.1
L3505
C3524 0.1
R3505 56
C3532 0.1
R3506 560
C3529 0.01
C3528 0.1
R3507 560
D
E
F
G
H
I
J

NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES, REFER TO BEGINNING OF SCHEMATIC SECTION.

COMPARISON CHART OF MODELS & MARKS

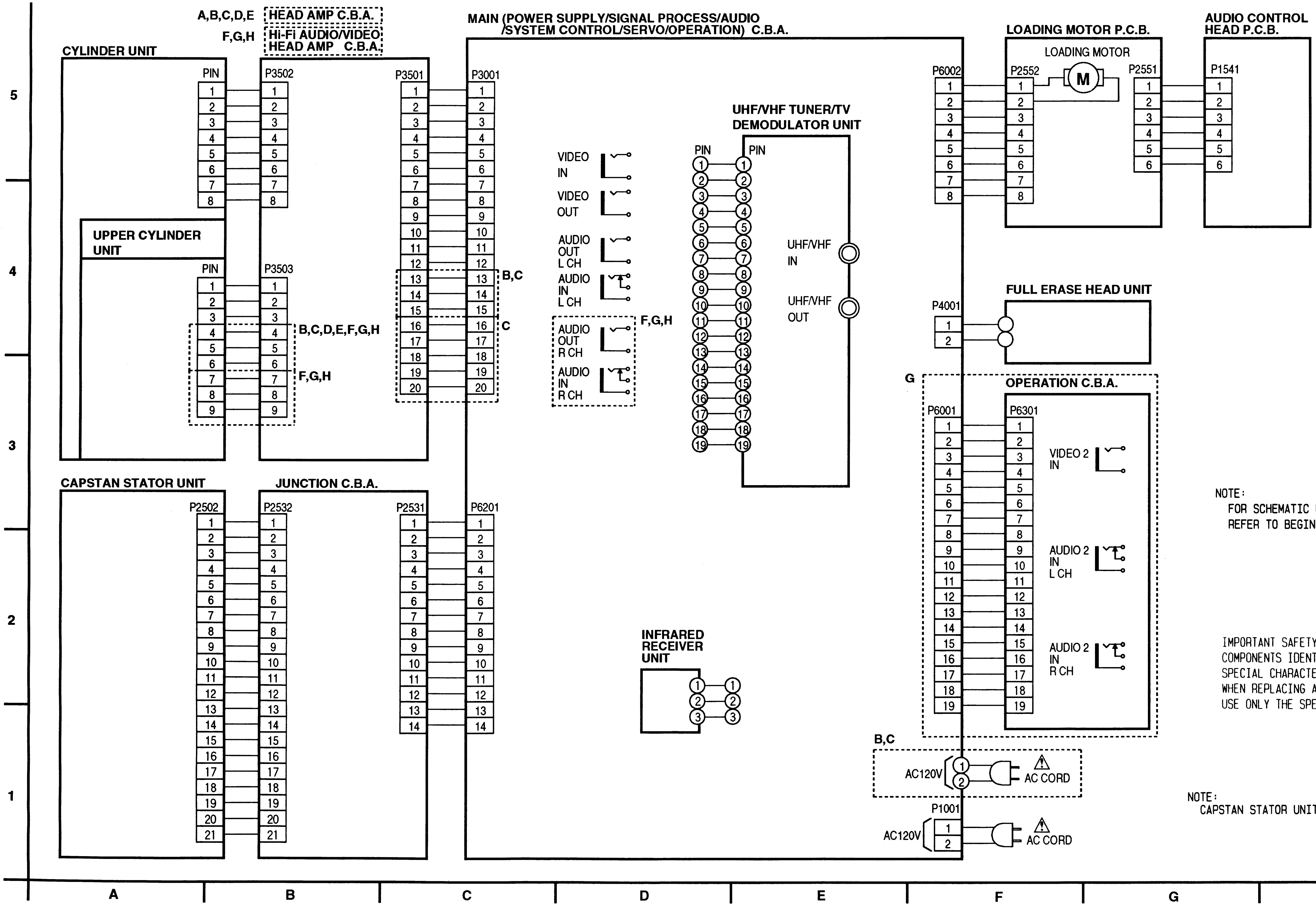
MODEL	MARK
VHQ720	A
PV-7400	B
PV-7401	C
PV-7401-K	D
VHQ740	E
PV-7450	F
PV-7451	G
VHQ760	H
Not Used	Z

Hi-Fi AUDIO/VIDEO HEAD AMP VOLTAGE CHART

MODE / PIN NO.	STOP	REC	PLAY	FF	REW
IC2601					
1	13.0	13.0	13.0	13.0	13.0
2	13.0	13.0	13.0	13.0	13.0
3	13.5	13.5	13.5	13.5	13.5
4	1.2	1.2	1.2	1.2	1.2
5	5.1	5.1	5.1	5.1	5.1
6	0.9	0.9	0.9	0.9	0.9
7	1.0	1.0	1.0	1.0	1.0
8	0.7	0.7	0.7	0.7	0.7
9	2.6	2.6	2.6	2.6	2.6
10	1.5	1.5	1.5	1.5	1.5
11	0	0	0	0	0
12	3.9	3.9	3.9	3.9	3.9
13	3.9	3.9	3.9	3.9	3.9
14	3.9	3.9	3.9	3.9	3.9
15	0.1	0.1	0.1	0.1	0.1
16	13.2	13.2	13.2	13.2	13.2
IC3501					
1	2.6	2.6	2.6	2.6	2.6
2	0	0	4.2	0	0
3	0.3	0.3	1.4	0.3	0.3
4	0	0	0.7	0	0
5	0	0	0	0	0
6	0	0	0.7	0	0
7	0.2	0.2	1.4	0.2	0.2
8	0	0	0	0	0
9	0	0	0	0	0
10	0.2	0.2	2.2	0.2	0.2
11	0	0	0	0	0
12	0	0	0	0	0
13	0	0	0	0	0
14	0.2	0.2	2.2	0.2	0.2
15	---	---	---	---	---
16	0	6.3	0	0	0
17	0	6.3	0	0	0
18	0	6.3	0	0	0
19	---	---	---	---	---
20	---	---	---	---	---

MODE / PIN NO.	STOP	REC	PLAY	FF	REW
21	---	---	---	---	---
22	---	---	---	---	---
23	---	---	---	---	---
24	---	---	---	---	---
25	0.5	11.9	0.5	0.5	0.5
26	5.0	5.0	5.0	5.0	5.0
27	0	0	0	0	0
28	0	0	0	0	0
29	0	0	0	0	0
30	2.7	2.7	2.3	2.7	2.7
31	5.1	5.1	0.1	5.1	5.1
32	0.1	0.1	0.1	0.1	0.1
33	0	0	0	0.2	0.2
34	0.1	0.1	0.7	0.1	0.1
35	12.0	12.0	12.0	12.0	12.0
36	0.1	0.1	5.0	0.1	0.1
IC4401					
1	2.6	0	2.6	2.6	2.6
2	0	4.0	0	0	0
3	0	0.6	0	0	0
4	0	0	0	0	0
5	0.7	0.6	0	0	0
6	0	4.0	0	0	0
7	1.0	1.0	1.0	1.0	1.0
8	0.7	0.7	0.7	0.7	0.7
9	2.6	2.6	2.6	2.6	2.6
10	1.5	1.5	1.5	1.5	1.5
11	0	0	0	0	0
12	3.9	3.9	3.9	3.9	3.9
13	3.9	3.9	3.9	3.9	3.9
14	3.9	3.9	3.9	3.9	3.9
15	0.1	0.1	0.1	0.1	0.1
16	13.0	13.0	13.0	13.0	13.0
TP3501	0	0	0	0	0
TP4402	0	4.0	4.0	0	0
TP4405	0	0	0	0	0
TP4406	2.6	2.6	2.6	2.6	2.6

INTERCONNECTION SCHEMATIC DIAGRAM


A,B,C,D,E HEAD AMP C.B.A.
F,G,H Hi-Fi AUDIO/VIDEO HEAD AMP C.B.A.
CYLINDER UNIT
PIN
P3502
P3501
P3001
UPPER CYLINDER UNIT
P3503
B,C,D,E,F,G,H
F,G,H
B,C
C
MAIN (POWER SUPPLY/SIGNAL PROCESS/AUDIO /SYSTEM CONTROL/SERVO/OPERATION) C.B.A.
VIDEO IN
VIDEO OUT
AUDIO OUT L CH
AUDIO IN L CH
AUDIO OUT R CH
AUDIO IN R CH
UHF/VHF TUNER/TV DEMODULATOR UNIT
UHF/VHF IN
UHF/VHF OUT
LOADING MOTOR P.C.B.
LOADING MOTOR
M
P6002
P2552
P2551
AUDIO CONTROL HEAD P.C.B.
P1541
FULL ERASE HEAD UNIT
P4001
G
OPERATION C.B.A.
P6001
P6301
VIDEO 2 IN
AUDIO 2 IN L CH
AUDIO 2 IN R CH
CAPSTAN STATOR UNIT
JUNCTION C.B.A.
P2502
P2532
P2531
P6201
INFRARED RECEIVER UNIT
B,C
AC120V
AC CORD
P1001
5
4
3
2
1
A
B
C
D
E
F
G
H

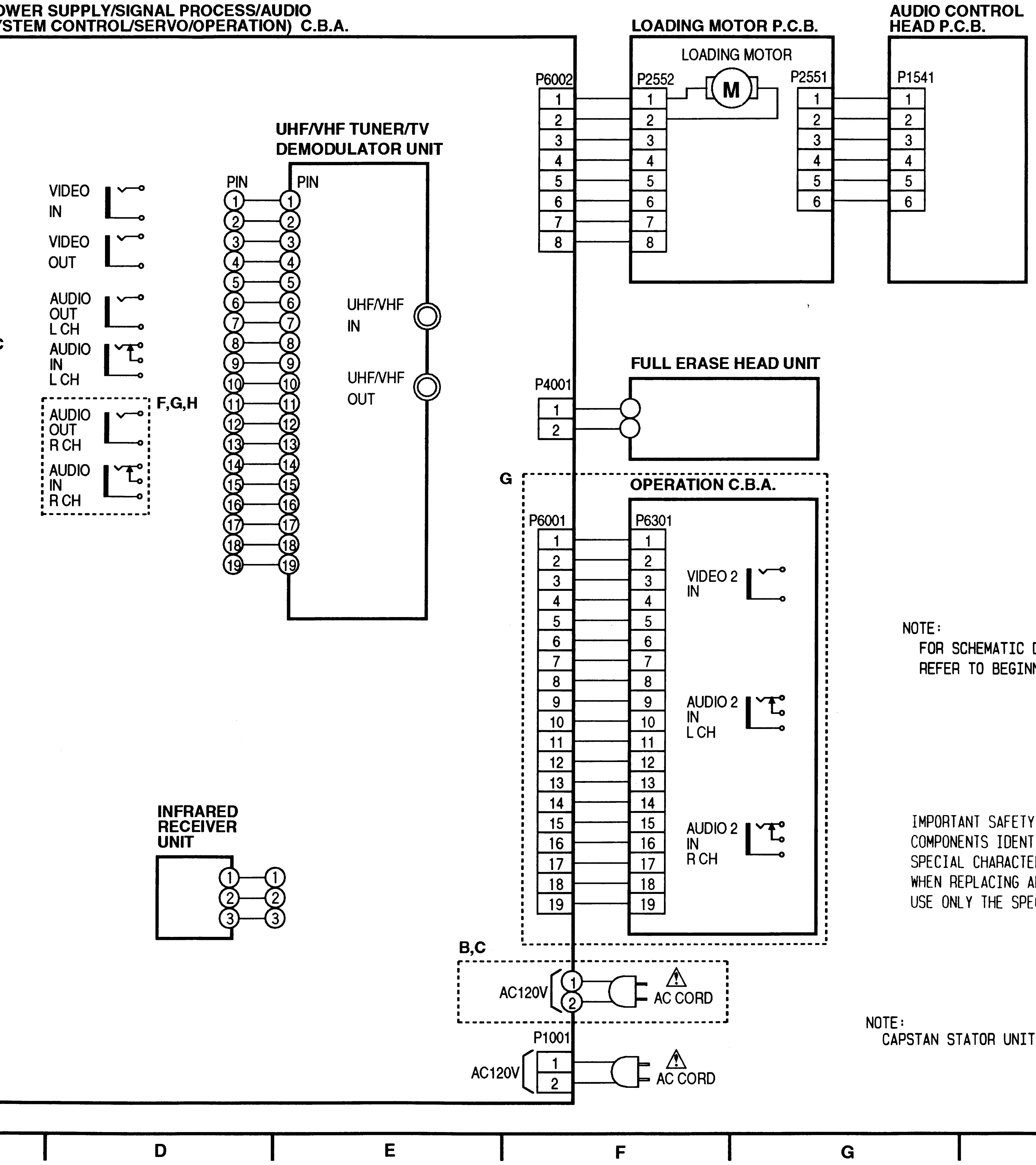
COMPARISON CHART
OF MODELS & MARKS

MODEL	MARK
VHQ720	A
PV-7400	B
PV-7401	C
PV-7401-K	D
VHQ740	E
PV-7450	F
PV-7451	G
VHQ760	H
Not Used	Z

NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES, REFER TO BEGINNING OF SCHEMATIC SECTION.

IMPORTANT SAFETY NOTICE:
COMPONENTS IDENTIFIED BY THE SIGN ⚠ HAVE SPECIAL CHARACTERISTICS IMPORTANT FOR SAFETY. WHEN REPLACING ANY OF THESE COMPONENTS, USE ONLY THE SPECIFIED PARTS.

NOTE:
CAPSTAN STATOR UNIT IS SUPPLIED AS A CAPSTAN STATOR KIT ONLY.



WER SUPPLY/SIGNAL PROCESS/AUDIO
STEM CONTROL/SERVO/OPERATION) C.B.A.
LOADING MOTOR P.C.B.
LOADING MOTOR
M
P6002
P2552
P2551
AUDIO CONTROL HEAD P.C.B.
P1541
UHF/VHF TUNER/TV DEMODULATOR UNIT
PIN
PIN
UHF/VHF IN
UHF/VHF OUT
VIDEO IN
VIDEO OUT
AUDIO OUT L CH
AUDIO IN L CH
AUDIO OUT R CH
AUDIO IN R CH
F,G,H
FULL ERASE HEAD UNIT
P4001
G
OPERATION C.B.A.
P6001
P6301
VIDEO 2 IN
AUDIO 2 IN L CH
AUDIO 2 IN R CH
INFRARED RECEIVER UNIT
B,C
AC120V
AC CORD
P1001
AC120V
AC CORD
D
E
F
G
H

COMPARISON CHART
OF MODELS & MARKS

MODEL	MARK
VHQ720	A
PV-7400	B
PV-7401	C
PV-7401-K	D
VHQ740	E
PV-7450	F
PV-7451	G
VHQ760	H
Not Used	Z

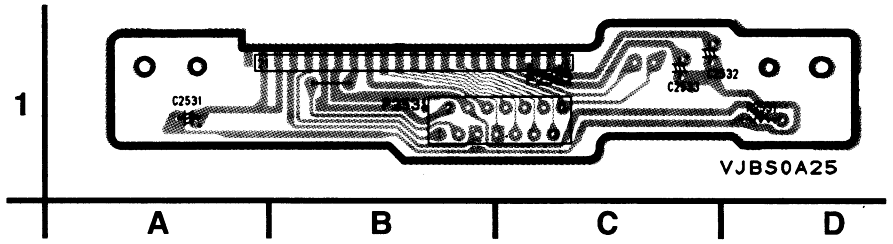
NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES, REFER TO BEGINNING OF SCHEMATIC SECTION.

IMPORTANT SAFETY NOTICE:
COMPONENTS IDENTIFIED BY THE SIGN ⚠ HAVE SPECIAL CHARACTERISTICS IMPORTANT FOR SAFETY. WHEN REPLACING ANY OF THESE COMPONENTS, USE ONLY THE SPECIFIED PARTS.

NOTE:
CAPSTAN STATOR UNIT IS SUPPLIED AS A CAPSTAN STATOR KIT ONLY.

CIRCUIT BOARD LAYOUT

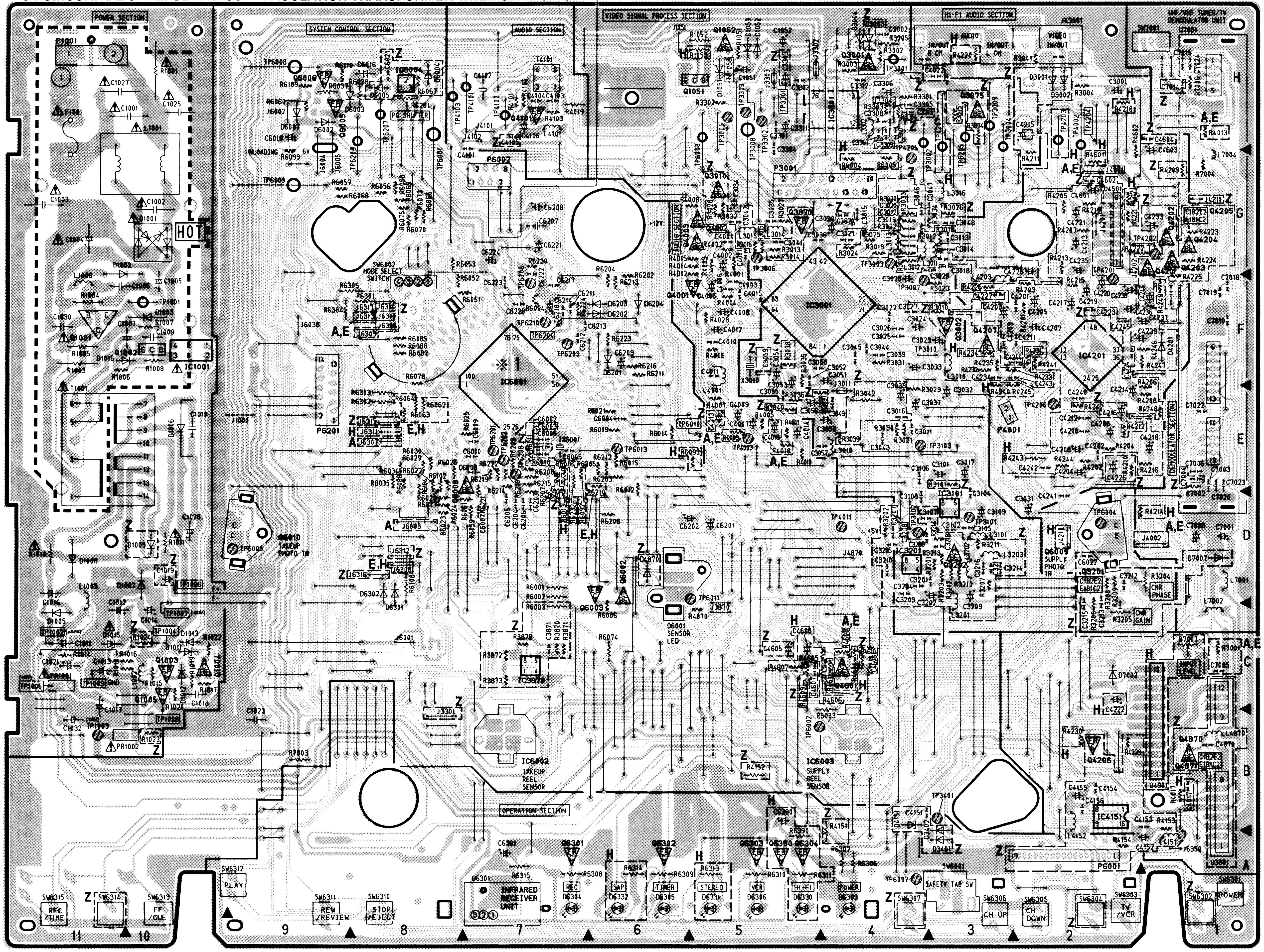
JUNCTION C.B.A. VEPS0A25A



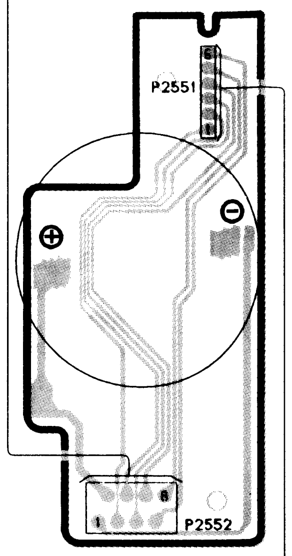
1
C2531
VJBS0A25
A
B
C
D

MAIN (POWER SUPPLY/SIGNAL PROCESS/AUDIO/SYSTEM CONTROL/SERVO/OPERATION) C.B.A. VEPS6026AC (A) /VEPS6026GB (E) /VEPS6026HB (H)

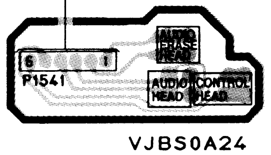
HOT CIRCUIT. BE CAREFUL AND USE AN ISOLATION TRANSFORMER WHEN SERVICING.

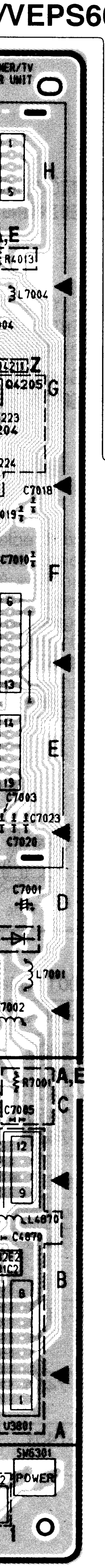

POWER SECTION
SYSTEM CONTROL SECTION
AUDIO SECTION
VIDEO SIGNAL PROCESS SECTION
HI-FI AUDIO SECTION
UHF/VHF TUNER/TV DEMODULATOR UNIT
DEMODULATOR SECTION
AUDIO SECTION
OPERATION SECTION
HOT
P1001
F1001
T1001
IC1001
IC6001
IC3001
IC4201
IC3101
IC3201
IC3870
IC4151
IC6004
SW6002 MODE SELECT SWITCH
PG SHIFTER
UNLOADING
Q6010 TAKEUP PHOTO TR
Q6009 SUPPLY PHOTO TR
D6001 SENSOR LED
IC6002 TAKEUP REEL SENSOR
IC6003 SUPPLY REEL SENSOR
CNR PHASE
CNR GAIN
INPUT LEVEL
JK3001
IN/OUT R CH
IN/OUT L CH
AUDIO
VIDEO IN/OUT
SW7001
U7001
U6301 INFRARED RECEIVER UNIT
SAFETY TAB SW
SW6315 REC /TIME
SW6314
SW6313 FF /CUE
SW6312 PLAY
SW6311 REW /REVIEW
SW6310 STOP/ /EJECT
REC
SAP
TIMER
STEREO
VCR
HI-FI
POWER
SW6306 CH UP
SW6305 CH DOWN
SW6304
SW6303 TV /VCR
SW6302
SW6301 POWER
P6001
11
10
9
8
7
6
5
4
3
2
1
A
B
C
D
E
F
G
H
VJBS6026

LOADING MOTOR P.C.B.


P2551
P2552
VJBS0A23

AUDIO CONTROL HEAD P.C.B.

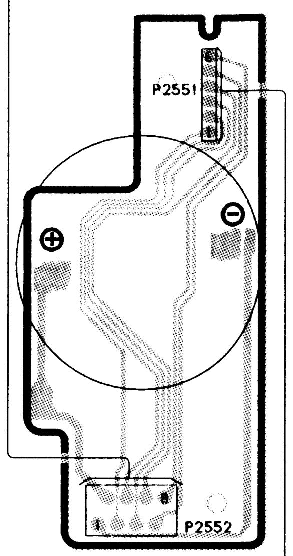

P1541
AUDIO ERASE HEAD
AUDIO HEAD
CONTROL HEAD
VJBS0A24



BS6026

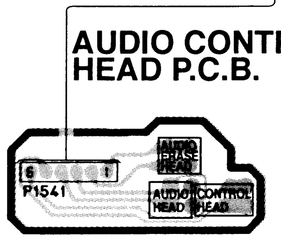
/VEPS6026HB (H)

LOADING MOTOR P.C.B.



VJBS0A23

AUDIO CONTROL HEAD P.C.B.



VJBS0A24

※ 1 IC6001 replacement note:

Model No.	products	replacement parts
VHQ720 VHQ740 VHQ760	MN675048A5B2 MN675048A5B1 MN675048A5B	MN675048A5B2

IMPORTANT SAFETY NOTICE:
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NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES, REFER TO BEGINNING OF SCHEMATIC SECTION.

COMPARISON CHART
OF MODELS & MARKS

MODEL	MARK
VHQ720	A
PV-7400	B
PV-7401	C
PV-7401-K	D
VHQ740	E
PV-7450	F
PV-7451	G
VHQ760	H
Not Used	Z

MAIN

TRANSISTOR	
Q1001	F-11
Q1002	F-10
Q1051	H-5
Q3002	F-3
Q3010	G-5
Q3201	D-2
Q3202	D-3
Q3870	G-5
Q3875	H-3
Q4201	G-1
Q4202	G-1
Q4203	G-1
Q4204	G-1
Q4205	G-1
Q4206	B-2
Q4207	F-3
Q4870	B-1
Q4871	B-1
Q6001	C-8
Q6007	H-9
Q6009	D-2
Q6010	D-9

MAIN

IC	
IC1001	F-10
IC3001	F-5
IC3101	D-4
IC3201	D-4
IC3301	H-4
IC3870	C-7
IC4151	B-2
IC4201	F-2
IC6001	F-7
IC6002	B-7
IC6003	B-5
IC6004	H-8

MAIN

TEST POINT	
TP1001	F-10
TP1002	C-11
TP1003	B-11
TP1004	C-10
TP1005	C-11
TP1006	D-10
TP1007	C-10
TP1008	B-10
TP1009	C-11
TP1058	H-5
TP3001	H-4
TP3002	G-4
TP3003	G-4
TP3004	H-3
TP3005	H-5
TP3006	G-5
TP3007	F-4
TP3008	H-5
TP3009	H-3
TP3101	D-3
TP3102	D-4
TP3103	E-3
TP3301	H-5
TP3302	H-5
TP3303	H-5
TP3401	B-3
TP4002	H-2
TP4003	E-5
TP4011	D-4

MAIN

ADJUSTMENT	
R3204	D-1
R3205	C-2
R6201	H-8
R7007	C-1

MAIN

TEST POINT	
TP4101	H-7
TP4102	H-7
TP4103	H-8
TP4201	G-2
TP4202	G-1
TP4203	H-2
TP4204	H-2
TP4205	H-4
TP4206	E-2
TP4207	H-3
TP6001	G-8
TP6002	B-5
TP6003	H-5
TP6004	D-2
TP6005	D-9
TP6007	A-1
TP6008	H-9
TP6009	G-9
TP6010	E-5
TP6013	E-6
TP6201	E-7
TP6202	E-7
TP6203	F-7
TP6204	F-7
TP6206	F-7
TP6207	H-8
TP6208	E-7
TP6209	G-8
TP6210	F-7

MAIN

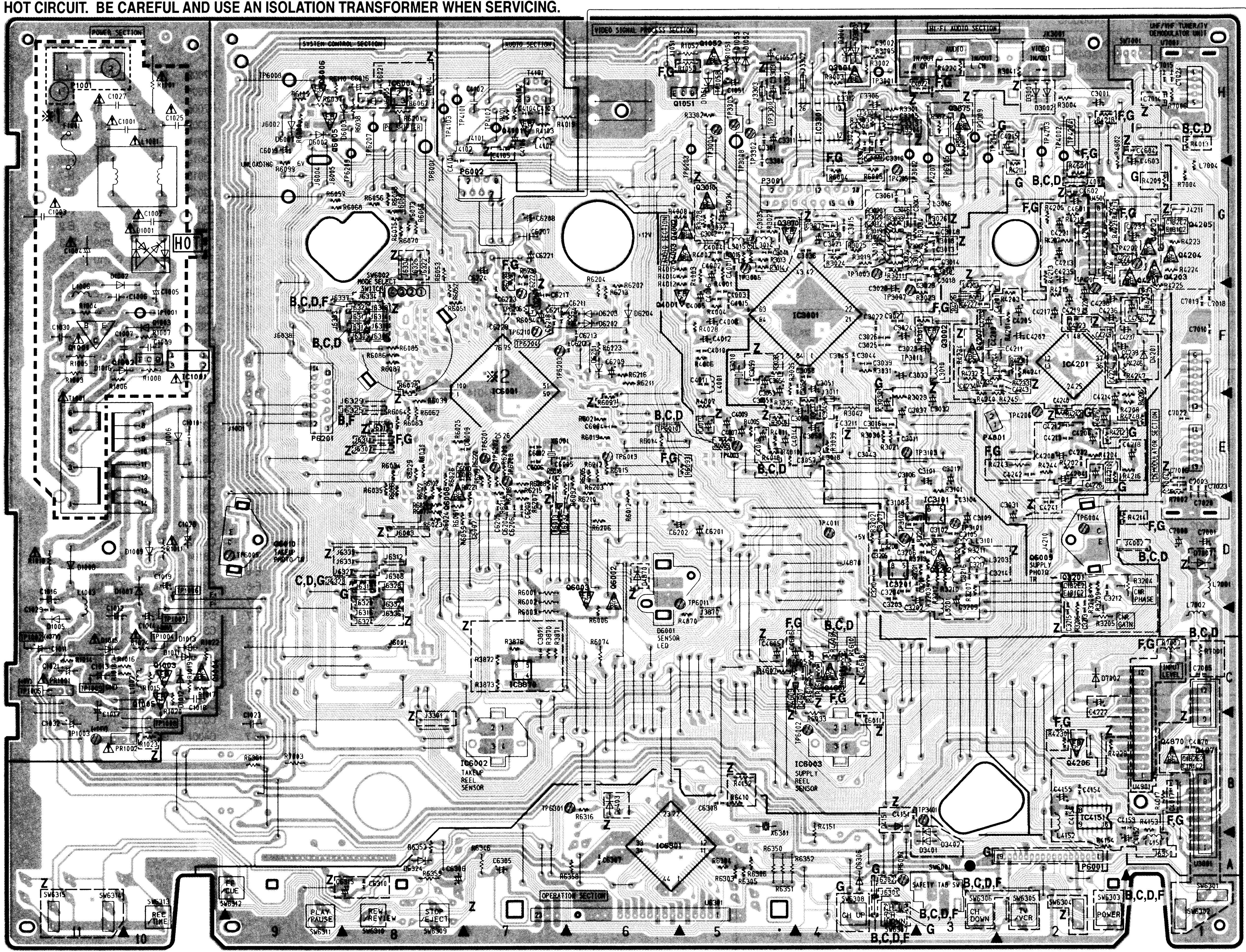
CONNECTOR	
P1001	H-11
P3001	G-5
P4001	E-3
P6001	A-1
P6002	G-7
P6201	E-9

LEADLESS COMPONENT PARTS LOCATION GUIDE
MAIN C.B.A.

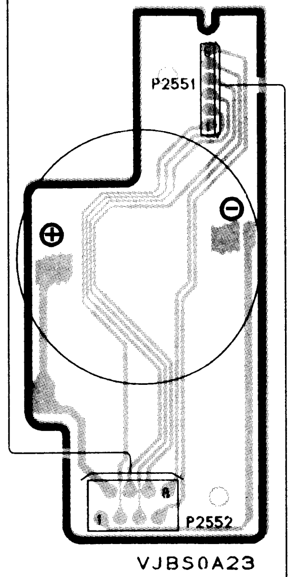
Q1003	C-10	R3035	F-5	R4221	G-2	R6064	E-8	R7002	D-1	C4004	G-5
Q1004	C-10	R3036	E-5	R4222	G-2	R6066	G-8	R7004	G-1	C4006	F-5
Q1005	C-10	R3041	H-2	R4226	F-3	R6068	G-9	R7006	H-1	C4010	F-5
Q1052	H-5	R3301	H-4	R4230	B-2	R6069	G-8	C3002	H-4	C4011	F-5
Q3001	H-4	R3302	H-5	R4234	F-3	R6070	G-8	C3011	E-4	C4015	F-5
Q3002	F-3	R3303	H-4	R4240	F-3	R6073	G-8	C3014	G-3	C4101	H-7
Q4001	F-6	R4001	G-5	R4241	F-3	R6075	G-8	C3015	G-4	C4103	H-7
Q4002	G-5	R4002	G-5	R4244	E-2	R6077	D-8	C3018	G-3	C4104	H-7
Q4003	G-6	R4003	G-5	R4245	E-3	R6078	F-8	C3019	G-4	C4201	F-3
Q4101	H-7	R4004	F-5	R4246	F-1	R6085	F-8	C3021	G-4	C4202	E-2
Q6002	D-6	R4005	E-5	R4247	F-1	R6086	F-8	C3022	F-4	C4209	F-3
Q6003	D-7	R4006	F-5	R4248	E-2	R6087	F-8	C3025	F-4	C4210	E-2
Q6005	H-9	R4007	E-5	R4249	F-1	R6088	D-8	C3026	F-4	C4211	F-3
Q6006	H-9	R4008	G-6	R6004	G-4	R6093	E-6	C3027	F-4	C4212	E-2
Q6008	D-8	R4009	E-5	R6005	G-4	R6094	F-7	C3029	F-3	C4240	E-2
Q6301	A-7	R4010	E-5	R6006	C-6	R6099	G-9	C3035	G-5	C4242	E-2
Q6302	A-6	R4011	E-5	R6012	E-6	R6102	E-8	C3036	G-5	C4244	F-3
Q6303	A-5	R4012	G-6	R6013	E-7	R6104	D-8	C3039	F-4	C6002	E-7
Q6304	A-5	R4013	H-1	R6014	E-6	R6109	H-9	C3043	E-4	C6004	E-6
Q6390	A-5	R4014	G-6	R6015	E-6	R6110	H-9	C3044	F-4	C6005	E-7
R1006	F-11	R4015	G-6	R6019	E-6	R6202	G-6	C3045	F-4	C6006	E-7
R1014	C-11	R4017	B-1	R6020	D-8	R6203	E-6	C3047	G-3	C6007	D-7
R1015	C-10	R4018	E-5	R6021	E-6	R6204	G-6	C3048	G-3	C6008	E-7
R1016	C-11	R4028	F-5	R6022	E-8	R6205	E-7	C3049	E-4	C6009	E-7
R1017	C-10	R4101	H-7	R6023	D-8	R6206	D-6	C3050	F-5	C6010	E-7
R1018	C-11	R4102	H-7	R6024	D-8	R6207	D-7	C3052	F-5	C6203	D-7
R1019	C-10	R4103	H-7	R6025	E-7	R6208	E-7	C3055	E-5	C6204	D-7
R1020	C-10	R4201	F-2	R6026	E-8	R6209	E-7	C3057	E-5	C6205	D-7
R1022	C-10	R4202	E-2	R6029	E-8	R6210	E-7	C3102	D-3	C6206	D-7
R1051	H-5	R4203	F-2	R6030	E-8	R6211	F-6	C3104	D-3	C6211	F-7
R3002	H-4	R4204	E-2	R6034	E-8	R6212	E-6	C3105	D-3	C6212	F-7
R3003	H-4	R4205	G-2	R6035	E-8	R6213	F-6	C3106	E-4	C6213	F-7
R3004	H-2	R4206	F-2	R6051	F-8	R6214	E-7	C3108	D-4	C6214	F-7
R3010	F-3	R4207	G-2	R6052	F-8	R6215	E-7	C3301	H-5	C6217	F-7
R3021	E-4	R4208	E-2	R6053	G-8	R6216	F-6	C3302	H-5	C6222	G-7
R3022	G-4	R4213	G-2	R6056	G-8	R6218	E-7	C3304	H-5	C6223	F-7
R3023	F-3	R4214	D-1	R6057	G-9	R6219	E-7	C3305	H-4	C6228	F-7
R3027	G-5	R4215	F-2	R6058	G-8	R6221	D-7	C3307	H-4	C7005	C-1
R3029	E-4	R4216	E-1	R6059	D-7	R6222	E-7	C3308	H-4	C7010	F-1
R3030	E-4	R4217	G-2	R6060	H-9	R6223	F-6	C3310	H-4	C7024	H-1
R3031	F-4	R4218	H-2	R6061	D-8	R6224	F-7	C3312	H-4	L7004	G-1
R3033	G-4	R4219	G-2	R6062	E-8	R6230	G-7	C4001	G-5		
R3034	G-4	R4220	H-3	R6063	E-8	R7001	C-1	C4003	F-5		

MAIN (POWER SUPPLY/SIGNAL PROCESS/AUDIO/SYSTEM CONTROL/SERVO/OPERATION) C.B.A. VEPS6023GH (B) /VEPS6023GJ (C,D) /VEPS6023HH (F) /VEPS6023HJ (G)

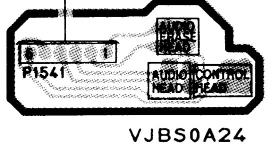
HOT CIRCUIT. BE CAREFUL AND USE AN ISOLATION TRANSFORMER WHEN SERVICING.


POWER SECTION
SYSTEM CONTROL SECTION
AUDIO SECTION
VIDEO SIGNAL PROCESS SECTION
Hi-Fi AUDIO SECTION
UHF/VHF TUNER/TV DEMODULATOR UNIT
DEMODULATOR SECTION
OPERATION SECTION
HOT
IC6001
IC3001
IC4201
IC6301
IC6002 TAKEUP REEL SENSOR
IC6003 SUPPLY REEL SENSOR
D6001 SENSOR LED
Q6010 TAKEUP PHOTO TR
Q6009 SUPPLY PHOTO TR
SW6002 MODE SELECT SWITCH
INPUT LEVEL
CNR PHASE
CNR GAIN
AUDIO IN/OUT
VIDEO IN/OUT
PLAY /PAUSE
REW /REVIEW
STOP /EJECT
FF /CUE
REC TIME
CH UP
CH DOWN
TV /VCR
POWER
SAFETY TAB SW
※2
A
B
C
D
E
F
G
H
1
2
3
4
5
6
7
8
9
10
11
VJBS6023

LOADING MOTOR P.C.B.


P2551
P2552
VJBS0A23

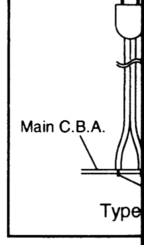
AUDIO CONTROL HEAD P.C.B.


P1541
AUDIO CONTROL HEAD
VJBS0A24

NOTE:
FOR SCHEMATIC DIAG
REFER TO BEGINNING

IMPORTANT SAFETY NOTI
COMPONENTS IDENTIFIED
SPECIAL CHARACTERISTI
WHEN REPLACING ANY OF
USE ONLY THE SPECIFIE

※1 AC cord repl
for model
Either Type-
models. How
changeability
P1001 as a k
ment. When
A, connect C
and connect


Main C.B.A.
Type

※2 IC6001 repl

Model No.
PV-7400 PV-7401 PV-7401-K PV-7450 PV-7451

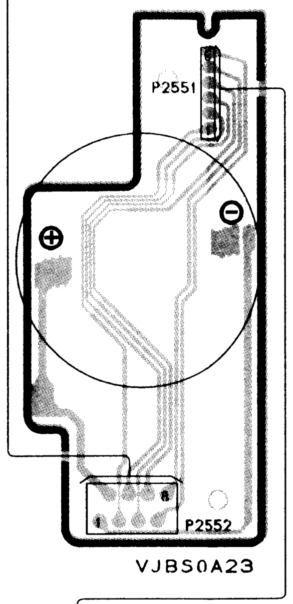
Main C.B.A.

Model No.
PV-7400
PV-7401
PV-7450
PV-7451

) /VEPS6023HH (F) /VEPS6023HJ (G)

H
C,D
R4013
L7004
G
4205
C7018
F
E
C7023
D
L7001
B,C,D
C
B
SW6301
A
BS6023

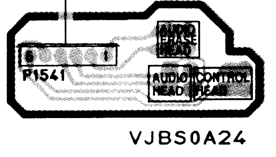
LOADING MOTOR P.C.B.



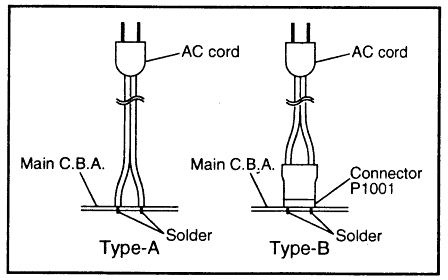
NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES, REFER TO BEGINNING OF SCHEMATIC SECTION.

IMPORTANT SAFETY NOTICE:
COMPONENTS IDENTIFIED BY THE SIGN ⚠ HAVE SPECIAL CHARACTERISTICS IMPORTANT FOR SAFETY. WHEN REPLACING ANY OF THESE COMPONENTS, USE ONLY THE SPECIFIED PARTS.

AUDIO CONTROL HEAD P.C.B.



※1 AC cord replacement note
for models PV-7400 and PV-7401:
Either Type-A or B is used as a AC cord for these models. However, for parts standardization and interchangeability, Type-B will be supplied with Connector P1001 as a kit (Part No.: VJAS0195-FS) for replacement. When replacing AC cord on products using Type-A, connect Connector P1001 to Main C.B.A. with solder and connect AC cord to Connector P1001.



※2 IC6001 replacement note:

Model No.	products	replacement parts
PV-7400 PV-7401 PV-7401-K PV-7450 PV-7451	MN675048A5A3 MN675048A5A2 MN675048A5A1 MN675048A5A	MN675048A5A3

Main C.B.A. replacement note:

Model No.	products	replacement parts
PV-7400	VEPS6023GH VEPS6023GF VEPS6023GK	VEPS6023GH
PV-7401	VEPS6023GJ VEPS6023GA VEPS6023GL	VEPS6023GJ
PV-7450	VEPS6023HH VEPS6023HF	VEPS6023HH
PV-7451	VEPS6023HJ VEPS6023HA	VEPS6023HJ

MAIN	
TRANSISTOR	
Q1001	F-11
Q1002	F-10
Q1003	C-10
Q1004	C-10
Q1005	C-10
Q1051	H-6
Q1052	H-5
Q3001	H-4
Q3002	F-3
Q3010	G-5
Q3201	D-2
Q3202	D-3
Q3870	G-5
Q3875	H-3
Q4001	F-6
Q4002	G-5
Q4003	G-6
Q4101	H-7
Q4201	F-2
Q4202	G-1
Q4203	G-1
Q4204	G-1
Q4205	G-1
Q4206	B-2
Q4207	F-3
Q4601	C-4
Q4870	B-1
Q4871	B-1
Q6001	C-8
Q6002	D-6
Q6003	D-6
Q6005	H-9
Q6006	H-9
Q6007	H-9
Q6008	D-8
Q6009	D-2
Q6010	D-9

COMPARISON CHART OF MODELS & MARKS

MODEL	MARK
VHQ720	A
PV-7400	B
PV-7401	C
PV-7401-K	D
VHQ740	E
PV-7450	F
PV-7451	G
VHQ760	H
Not Used	Z

MAIN	
TEST POINT	
TP1001	F-10
TP1002	C-11
TP1003	B-11
TP1004	C-10
TP1005	C-11
TP1006	D-10
TP1007	C-10
TP1008	B-10
TP1009	C-11
TP1058	H-5
TP3001	H-4
TP3002	G-3
TP3003	G-4
TP3004	H-2
TP3005	H-5
TP3006	G-5
TP3007	F-4
TP3008	G-5
TP3009	H-3
TP3010	F-4
TP3101	D-3
TP3102	D-4
TP3103	E-3
TP3301	H-5
TP3302	H-5
TP3303	H-5
TP3401	B-3
TP4002	H-2
TP4003	E-5
TP4011	D-4
TP4101	H-7

MAIN	
IC	
IC1001	F-10
IC3001	F-4
IC3101	D-3
IC3201	D-4
IC3301	H-4
IC3870	C-7
IC4151	B-2
IC4201	F-2
IC6001	F-7
IC6002	B-7
IC6003	B-4
IC6004	H-8

MAIN	
TEST POINT	
TP4102	H-7
TP4103	H-8
TP4201	G-2
TP4202	G-1
TP4203	H-2
TP4204	H-2
TP4205	H-4
TP4206	E-2
TP4207	H-3
TP6001	G-8
TP6002	B-4
TP6003	G-5
TP6004	D-2
TP6005	D-9
TP6007	A-4
TP6008	H-9
TP6010	E-6
TP6011	D-5
TP6013	E-6
TP6201	E-7
TP6202	E-7
TP6203	F-7
TP6204	F-7
TP6205	G-3
TP6206	F-7
TP6207	H-8
TP6208	E-7
TP6209	G-8
TP6210	F-7
TP6301	B-7

MAIN	
CONNECTOR	
P1001	H-11
P3001	G-5
P4001	E-3
P6001	A-2
P6002	G-7
P6201	E-9

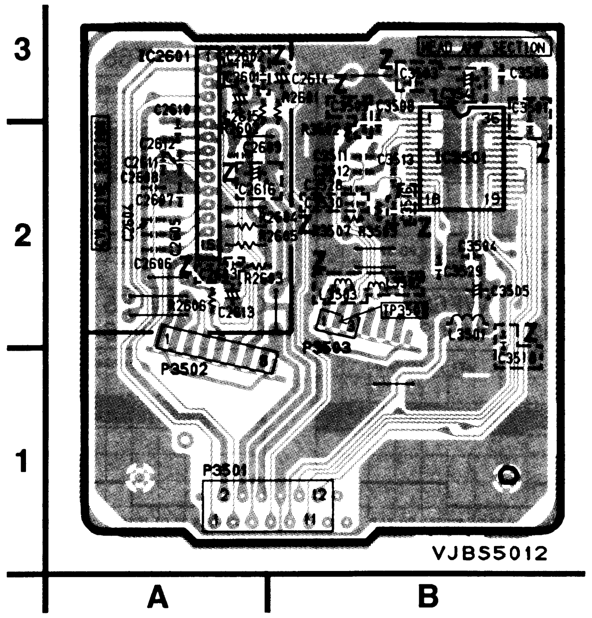
MAIN	
ADJUSTMENT	
R3204	D-1
R3205	C-2
R6201	H-8
R7007	C-1

LEADLESS COMPONENT PARTS LOCATION GUIDE
MAIN C.B.A.

Q1003	C-10
Q1004	C-10
Q1005	C-10
Q1052	H-5
Q3001	H-4
Q3002	F-3
Q4001	F-6
Q4002	G-5
Q4003	G-6
Q4101	H-7
Q6002	D-6
Q6003	D-7
Q6005	H-9
Q6006	H-9
Q6008	D-8
R1006	F-11
R1014	C-11
R1015	C-10
R1016	C-11
R1017	C-10
R1018	C-11
R1019	C-10
R1020	C-10
R1022	C-10
R1051	H-5
R3002	H-4
R3003	H-4
R3004	H-2
R3010	F-3
R3021	E-4
R3022	G-4
R3023	F-3
R3027	G-5
R3029	E-4
R3030	E-4
R3031	F-4
R3033	G-4
R3034	G-4
R3035	F-5
R3036	E-5
R3041	H-2
R3301	H-4
R3302	H-5
R3303	H-4
R4001	G-5
R4002	G-5
R4003	G-5
R4004	F-5
R4005	E-5
R4006	F-5
R4007	E-5
R4008	G-6
R4009	E-5
R4010	E-5
R4011	E-5
R4012	G-6
R4013	H-1
R4014	G-6
R4015	G-6
R4017	B-1
R4018	E-5
R4028	F-5
R4101	H-7
R4102	H-7
R4103	H-7
R4201	F-2
R4202	E-2
R4203	F-2
R4204	E-2
R4205	G-2
R4206	F-2
R4207	G-2
R4208	E-2
R4213	G-2
R4214	D-1
R4215	F-2
R4216	E-1
R4217	G-2
R4218	H-2
R4219	G-2
R4220	H-3
R4221	G-2
R4222	G-2
R4226	F-3
R4230	B-2
R4234	F-3
R4240	F-3
R4241	F-3
R4244	E-2
R4245	E-3
R4246	F-1
R4247	F-1
R4248	E-2
R4249	F-1
R6004	G-4
R6005	G-4
R6006	C-6
R6012	E-6
R6013	E-7
R6014	E-6
R6015	E-6
R6019	E-6
R6020	D-8
R6021	E-6
R6022	E-8
R6023	D-8
R6024	D-8
R6025	E-7
R6026	E-8
R6029	E-8
R6030	E-8
R6034	E-8
R6035	E-8
R6051	F-8
R6052	F-8
R6053	G-8
R6056	G-8
R6057	G-9
R6058	G-8
R6059	D-7
R6060	H-9
R6061	D-8
R6062	E-8
R6063	E-8
R6064	E-8
R6066	G-8
R6068	G-9
R6069	G-8
R6070	G-8
R6073	G-8
R6075	G-8
R6077	D-8
R6078	F-8
R6085	F-8
R6086	F-8
R6087	F-8
R6088	D-8
R6093	E-6
R6094	F-7
R6099	G-9
R6102	E-8
R6104	D-8
R6109	H-9
R6110	H-9
R6202	G-6
R6203	E-6
R6204	G-6
R6205	E-7
R6206	D-6
R6207	D-7
R6208	E-7
R6209	E-7
R6210	E-7
R6211	F-6
R6212	E-6
R6213	F-6
R6214	E-7
R6215	E-7
R6216	F-6
R6218	E-7
R6219	E-7
R6221	D-7
R6222	E-7
R6223	F-6
R6224	F-7
R6230	G-7
R7001	C-1
R7002	D-1
R7004	G-1
R7006	H-1
C3002	H-4
C3011	E-4
C3014	G-3
C3015	G-4
C3018	G-3
C3019	G-4
C3021	G-4
C3022	F-4
C3025	F-4
C3026	F-4
C3027	F-4
C3029	F-3
C3035	G-5
C3036	G-5
C3039	F-4
C3043	E-4
C3044	F-4
C3045	F-4
C3047	G-3
C3048	G-3
C3049	E-4
C3050	F-5
C3052	F-5
C3055	E-5
C3057	E-5
C3102	D-3
C3104	D-3
C3105	D-3
C3106	E-4
C3108	D-4
C3301	H-5
C3302	H-5
C3304	H-5
C3305	H-4
C3307	H-4
C3308	H-4
C3310	H-4
C3312	H-4
C4001	G-5
C4003	F-5
C4004	G-5
C4006	F-5
C4010	F-5
C4011	F-5
C4015	F-5
C4101	H-7
C4103	H-7
C4104	H-7
C4201	F-3
C4202	E-2
C4209	F-3
C4210	E-2
C4211	F-3
C4212	E-2
C4240	E-2
C4242	E-2
C6002	E-7
C6004	E-6
C6005	E-7
C6006	E-7
C6007	D-7
C6008	E-7
C6009	E-7
C6010	E-7
C6203	D-7
C6204	D-7
C6205	D-7
C6206	D-7
C6211	F-7
C6212	F-7
C6213	F-7
C6214	F-7
C6217	F-7
C6222	G-7
C6223	F-7
C6228	F-7
C7005	C-1
C7010	F-1
C7024	H-1
L7004	G-1

NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES,
REFER TO BEGINNING OF SCHEMATIC SECTION.

HEAD AMP C.B.A. VEPS5012A(A)

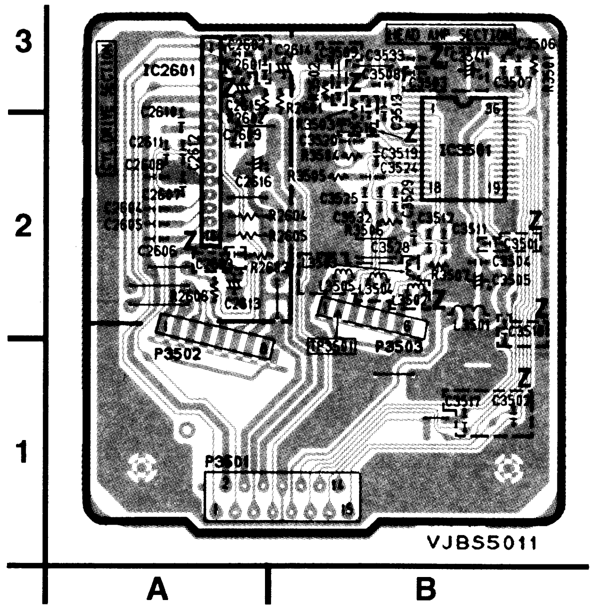

3
2
1
A
B
IC2601
IC3501
P3502
P3501
TP3501
HEAD AMP SECTION
VJBS5012

HEAD AMP	
IC	
IC2601	A–2
IC3501	B–2
CONNECTOR	
P3501	A–1
P3502	A–1
P3503	B–2
TEST POINT	
TP3501	B–2

LEADLESS COMPONENT PARTS LOCATION GUIDE
HEAD AMP C.B.A.

R2601	B-3	C2605	A-2	C3504	B-2
R2602	A-3	C2606	A-2	C3506	B-3
R2603	A-2	C2607	A-2	C3508	B-3
R2606	A-2	C2608	A-2	C3511	B-2
R3502	B-2	C2609	A-2	C3512	B-2
R3503	B-2	C2610	A-3	C3513	B-2
R3507	B-2	C2611	A-2	C3528	B-2
C2604	A-2	C2612	A-2	C3529	B-2

HEAD AMP C.B.A. VEPS5011A(B,C,D,E)

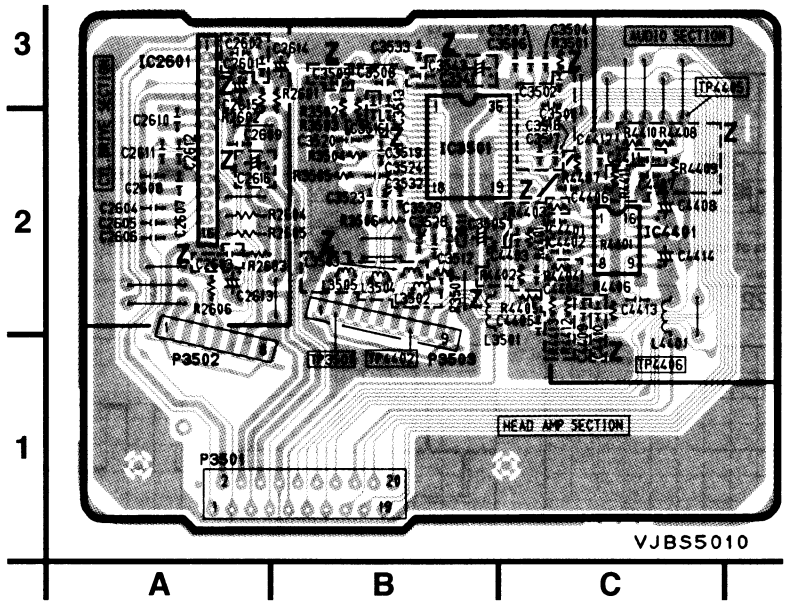

3
2
1
A
B
IC2601
IC3501
P3502
P3503
P3501
HEAD AMP SECTION
VJBS5011

HEAD AMP	
IC	
IC2601	A–3
IC3501	B–2
CONNECTOR	
P3501	A–1
P3502	A–1
P3503	B–2
TEST POINT	
TP3501	B–2

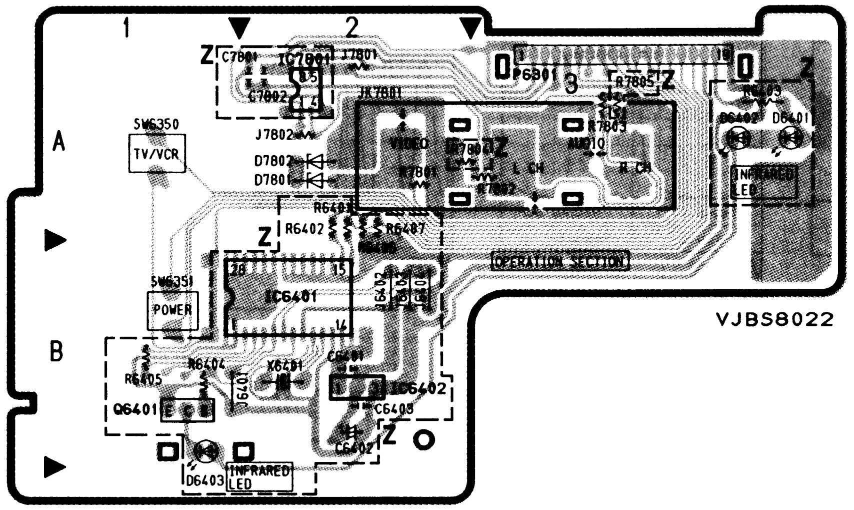
LEADLESS COMPONENT PARTS LOCATION GUIDE
HEAD AMP C.B.A.

R2601	B-3	C2605	A-2	C3511	B-2
R2602	A-3	C2606	A-2	C3512	B-2
R2603	A-2	C2607	A-2	C3513	B-2
R2606	A-2	C2608	A-2	C3519	B-2
R3501	B-3	C2609	A-2	C3520	B-2
R3502	B-3	C2610	A-3	C3524	B-2
R3503	B-2	C2611	A-2	C3525	B-2
R3504	B-2	C2612	A-2	C3528	B-2
R3505	B-2	C3504	B-2	C3529	B-2
R3506	B-2	C3506	B-3	C3532	B-2
R3507	B-2	C3507	B-3	C3533	B-3
C2604	A-2	C3508	B-3		

Hi-Fi AUDIO/VIDEO HEAD AMP C.B.A. VEPS5010A(F,


3
2
1
A
B
C
IC2601
IC3501
IC4401
P3502
P3503
P3501
TP4405
TP4406
AUDIO SECTION
HEAD AMP SECTION
VJBS5010

OPERATOIN C.B.A. VEPS8022A(G)


1
2
A
B
SW6350
TV/VCR
SW6351
POWER
IC6401
IC6402
IC7801
JK7801
VIDEO
L CH
R CH
INFRARED LED
OPERATION SECTION
Q6401
D6403
VJBS8022

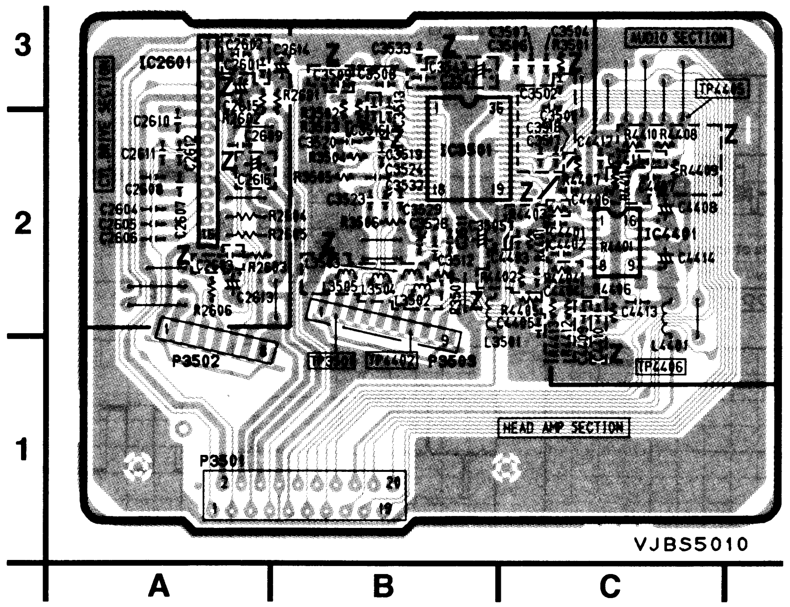
NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES,
REFER TO BEGINNING OF SCHEMATIC SECTION.

EAD AMP	
IC	
	A–2
	B–2
ONNECTOR	
	A–1
	A–1
	B–2
POINT	
	B–2

LEADLESS COMPONENT PARTS LOCATION GUIDE
HEAD AMP C.B.A.

R2601	B-3	C2605	A-2	C3504	B-2
R2602	A-3	C2606	A-2	C3506	B-3
R2603	A-2	C2607	A-2	C3508	B-3
R2606	A-2	C2608	A-2	C3511	B-2
R3502	B-2	C2609	A-2	C3512	B-2
R3503	B-2	C2610	A-3	C3513	B-2
R3507	B-2	C2611	A-2	C3528	B-2
C2604	A-2	C2612	A-2	C3529	B-2

Hi-Fi AUDIO/VIDEO HEAD AMP C.B.A. VEPS5010A(F,G,H)


3
2
1
A
B
C
IC2601
IC3501
IC4401
P3501
P3502
P3503
TP3501
TP4402
TP4405
TP4406
AUDIO SECTION
HEAD AMP SECTION
VJBS5010

Hi-Fi AUDIO/VIDEO HEAD AMP	
IC	
IC2601	A–3
IC3501	B–2
IC4401	C–2
CONNECTOR	
P3501	A–1
P3502	A–1
P3503	B–2
TEST POINT	
TP3501	B–2
TP4402	B–2
TP4405	C–2
TP4406	C–1

LEADLESS COMPONENT PARTS LOCATION GUIDE
Hi-Fi AUDIO/VIDEO HEAD AMP C.B.A.

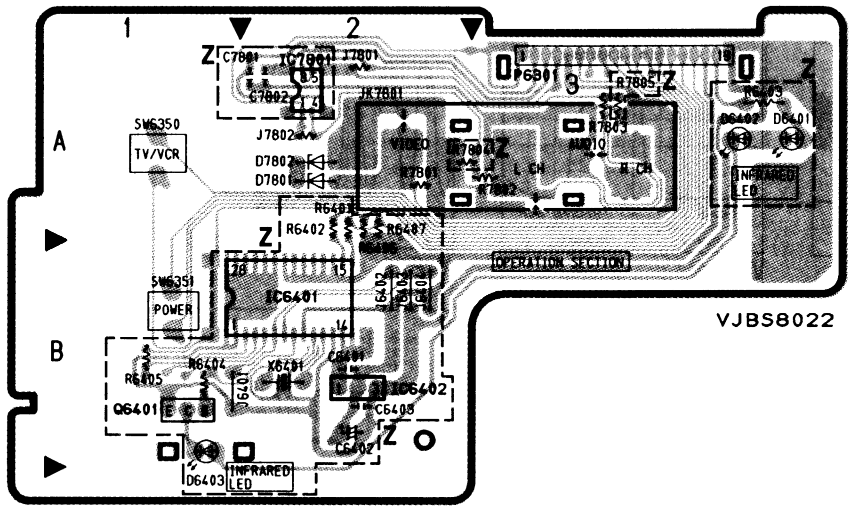
R2601	B-3	C2606	A-2	C3523	B-2
R2602	A-2	C2607	A-2	C3524	B-2
R2603	A-2	C2608	A-2	C3528	B-2
R2606	A-2	C2609	A-2	C3529	B-2
R3501	C-3	C2610	A-2	C3532	B-2
R3502	B-2	C2611	A-2	C3533	B-3
R3503	B-3	C2612	A-2	C4401	C-2
R3504	B-2	C3504	C-3	C4402	C-2
R3505	B-2	C3506	B-3	C4405	C-2
R3506	B-2	C3507	C-3	C4406	C-2
R3507	B-2	C3508	B-3	C4409	C-2
R4405	C-2	C3511	B-2	C4411	C-2
R4406	C-2	C3512	B-2	C4412	C-2
R4407	C-2	C3513	B-2	C4413	C-2
C2604	A-2	C3519	B-2		
C2605	A-2	C3520	B-2		

AD AMP	
IC	
	A–3
	B–2
NNECTOR	
	A–1
	A–1
	B–2
POINT	
	B–2

LEADLESS COMPONENT PARTS LOCATION GUIDE
HEAD AMP C.B.A.

R2601	B-3	C2605	A-2	C3511	B-2
R2602	A-3	C2606	A-2	C3512	B-2
R2603	A-2	C2607	A-2	C3513	B-2
R2606	A-2	C2608	A-2	C3519	B-2
R3501	B-3	C2609	A-2	C3520	B-2
R3502	B-3	C2610	A-3	C3524	B-2
R3503	B-2	C2611	A-2	C3525	B-2
R3504	B-2	C2612	A-2	C3528	B-2
R3505	B-2	C3504	B-2	C3529	B-2
R3506	B-2	C3506	B-3	C3532	B-2
R3507	B-2	C3507	B-3	C3533	B-3
C2604	A-2	C3508	B-3		

OPERATOIN C.B.A. VEPS8022A(G)


1
2
A
B
SW6350
TV/VCR
SW6351
POWER
IC6401
IC6402
IC7801
Q6401
D6401
D6402
D6403
INFRARED LED
VIDEO
L CH
R CH
AUDIO
OPERATION SECTION
VJBS8022

OPERATION	
IC	
IC6401	B–2
IC6402	B–2
IC7801	A–2
TRANSISTOR	
Q6401	B–1
CONNECTOR	
P6301	A–3

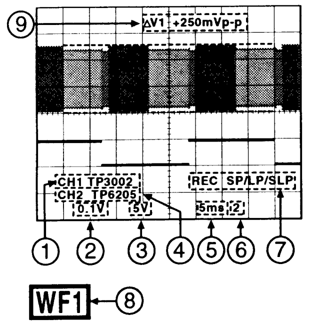
COMPARISON CHART
OF MODELS & MARKS

MODEL	MARK
VHQ720	A
PV-7400	B
PV-7401	C
PV-7401-K	D
VHQ740	E
PV-7450	F
PV-7451	G
VHQ760	H
Not Used	Z

NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES, REFER TO BEGINNING OF SCHEMATIC SECTION.

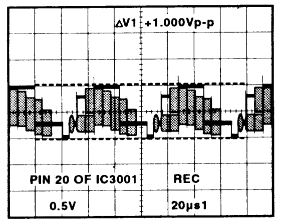
SIGNAL WAVEFORM

How to Read Waveforms



① Connecting Point
② Volts/Div
③ Volts/Div
④ Connecting Point
⑤ Time/Div
⑥ Trigger Channel of the scope (1:CH1,2:CH2)
⑦ Operation Mode of VCR
⑧ Waveform Point on Schematic
⑨ ΔV1:Peak to Peak

MAIN C.B.A.



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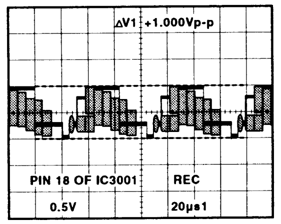

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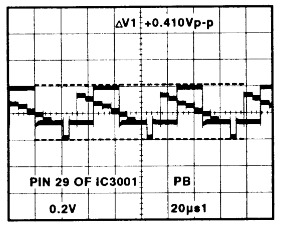

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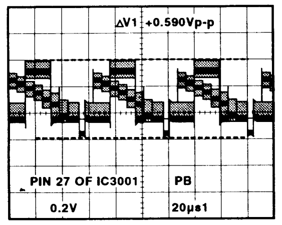

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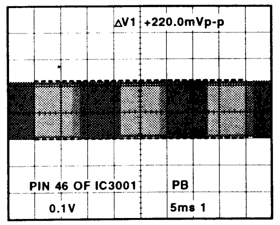

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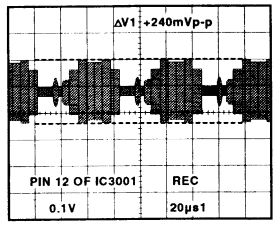

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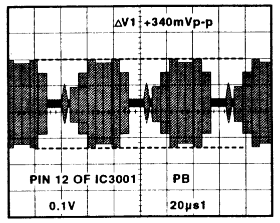

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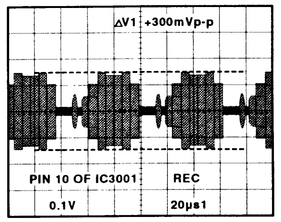

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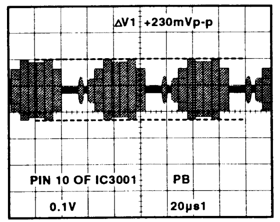

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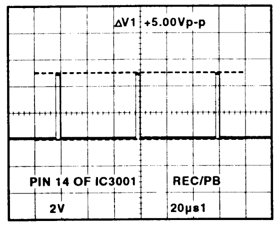
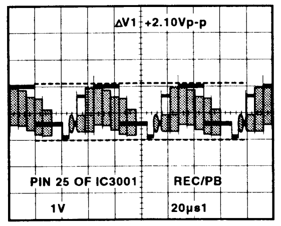


WF8



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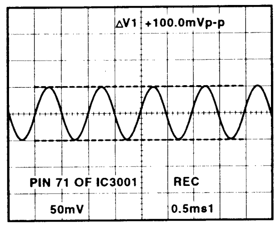
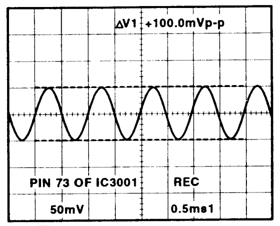
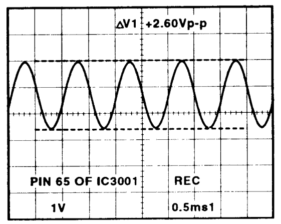


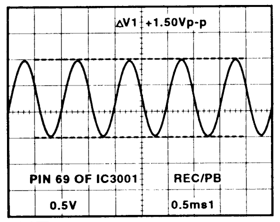
WF10 (A,B,C,D,E)



WF11



WF12



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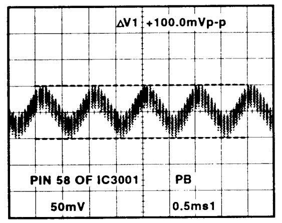

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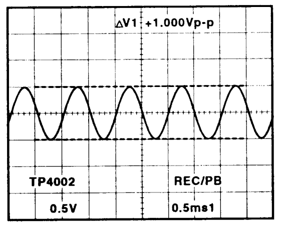

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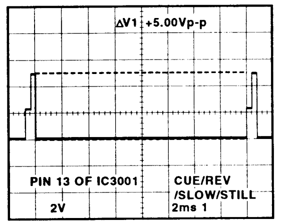

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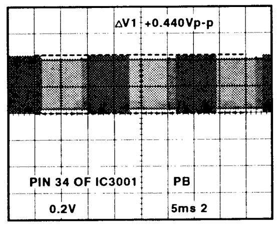

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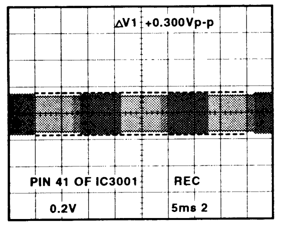

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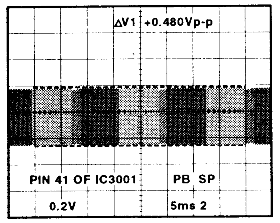

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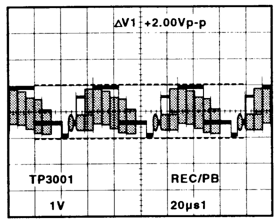

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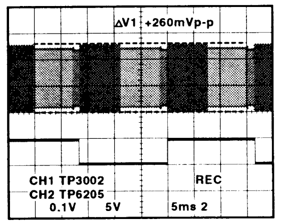
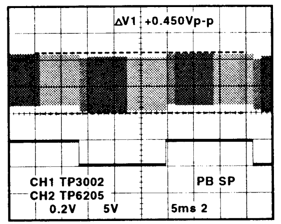
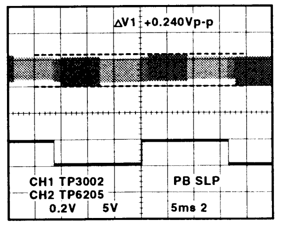


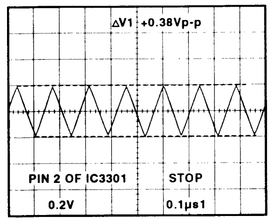
CH1 WF20
CH2 WF26



CH1 WF20
CH2 WF26



CH1 WF20
CH2 WF26



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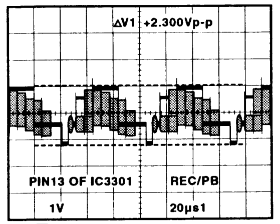

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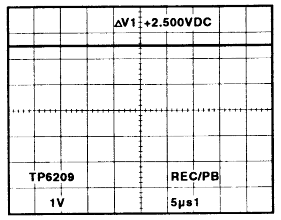

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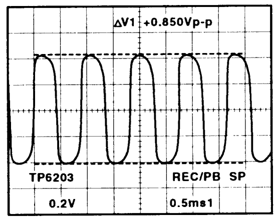

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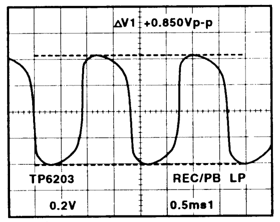

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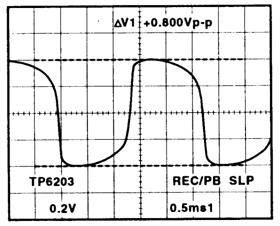

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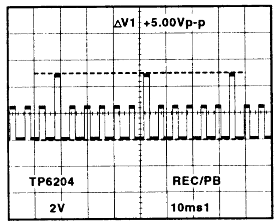

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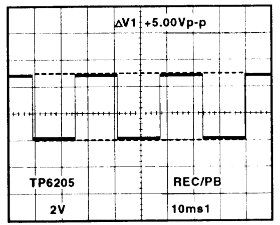

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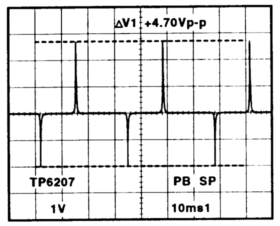

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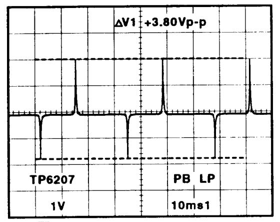

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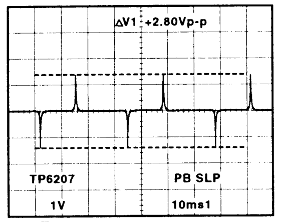

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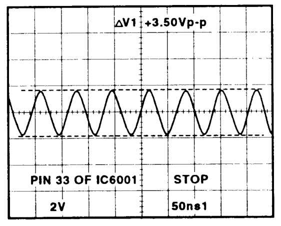

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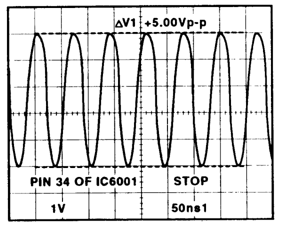

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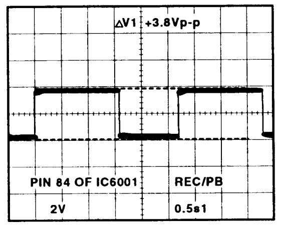
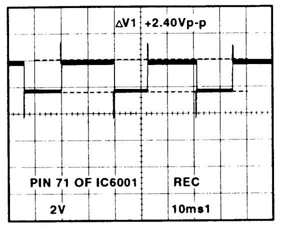
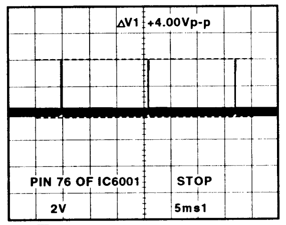


WF30



WF31



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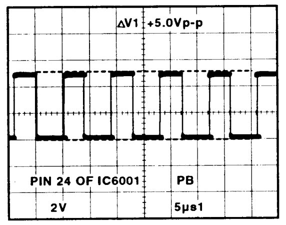

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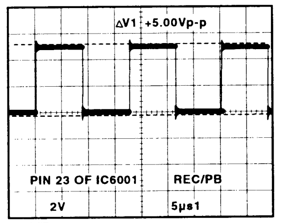

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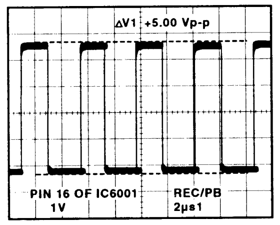

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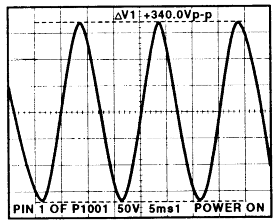
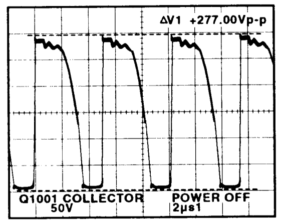
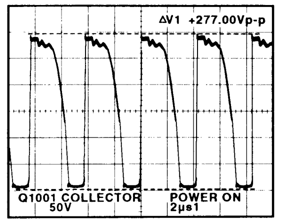


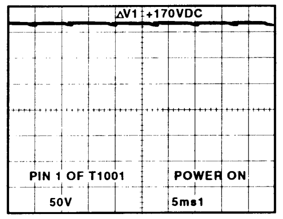
WF37



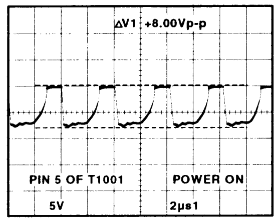
WF38



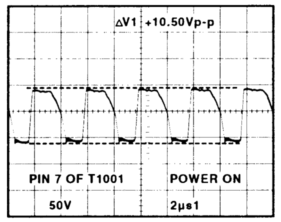
WF38



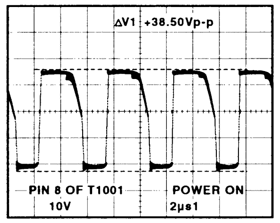
WF39



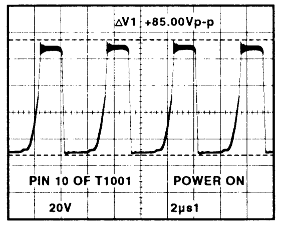
WF40



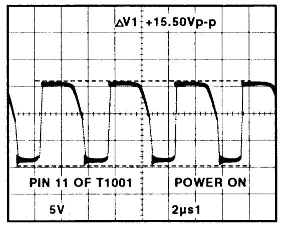
WF41



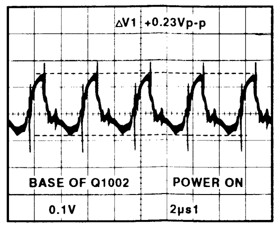
WF42



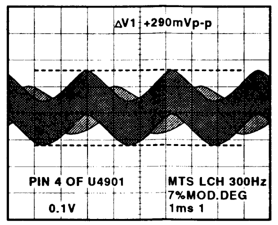
WF43



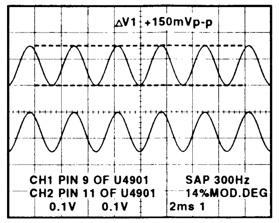
WF44



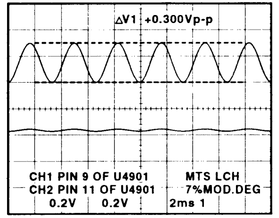
WF45



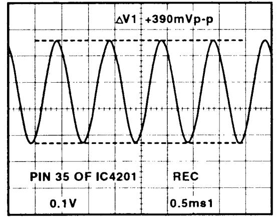
WF46 (F,G,H)



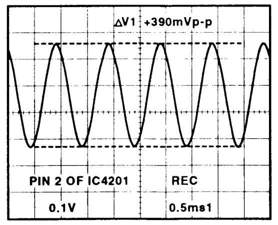
CH1 WF47 (F,G,H)
CH2 WF48 (F,G,H)



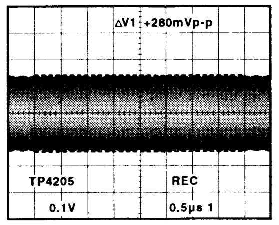
CH1 WF47 (F,G,H)
CH2 WF48 (F,G,H)



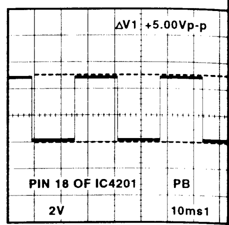
WF49 (F,G,H)



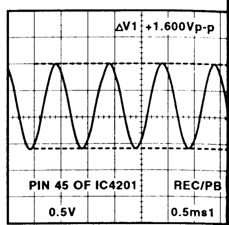
WF50 (F,G,H)



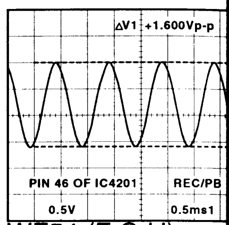
WF51 (F,G,H)



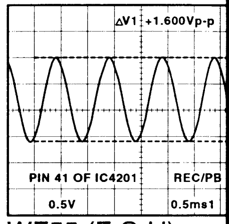
WF52 (F,G,H)



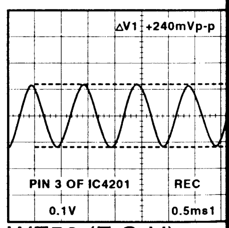
WF53 (F,G,H)



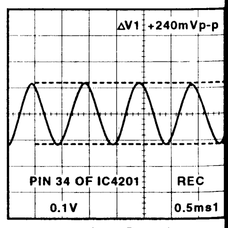
WF54 (F,G,H)



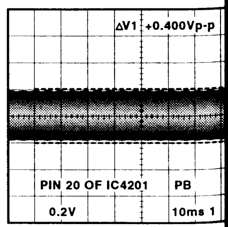
WF55 (F,G,H)



WF56 (F,G,H)

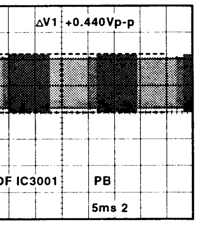


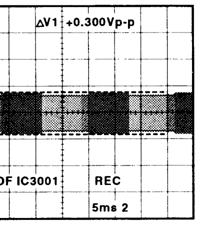
WF57 (F,G,H)

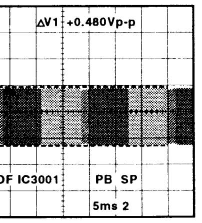


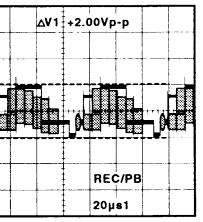
WF58 (F,G,H)

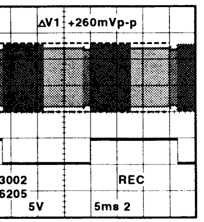
NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES, REFER TO BEGINNING OF SCHEMATIC SECTION.



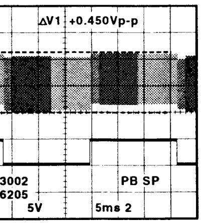




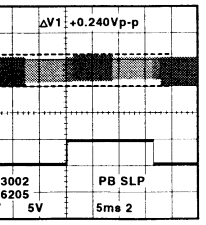




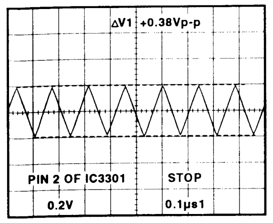
WF20
WF26



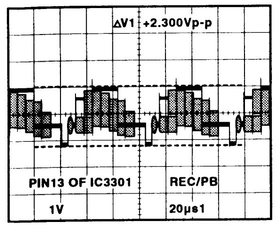
WF20
WF26



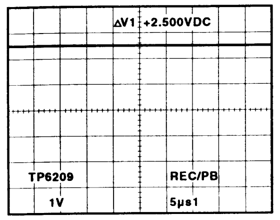
WF20
WF26



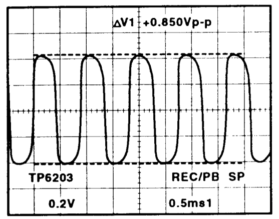
WF21



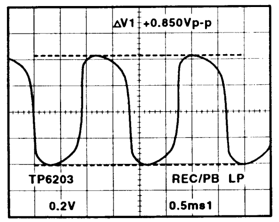
WF22



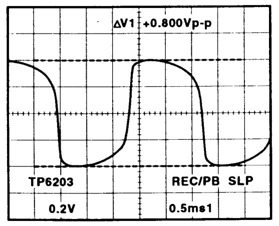
WF23



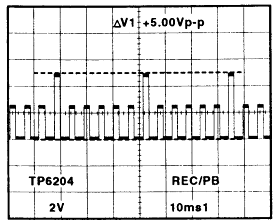
WF24



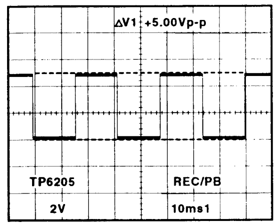
WF24



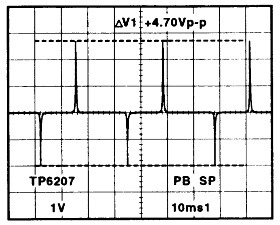
WF24



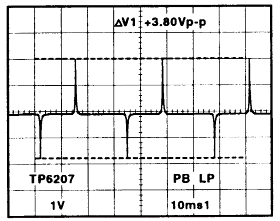
WF25



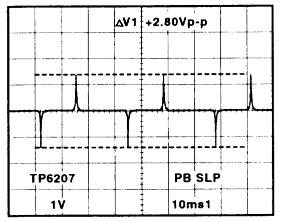
WF26



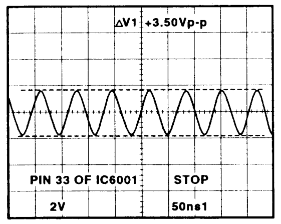
WF27



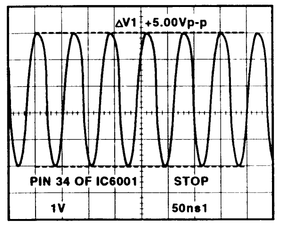
WF27



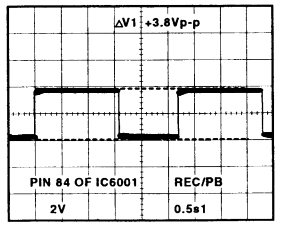
WF27



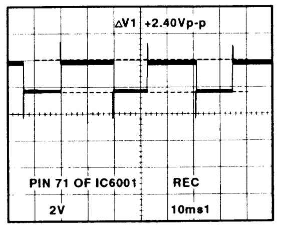
WF28



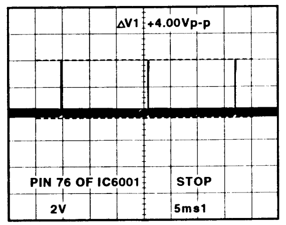
WF29



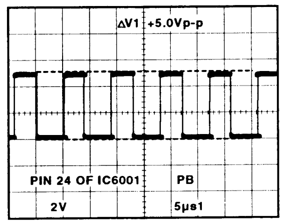
WF30



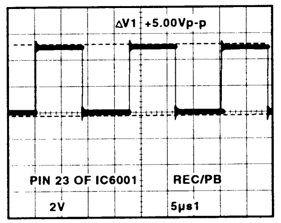
WF31



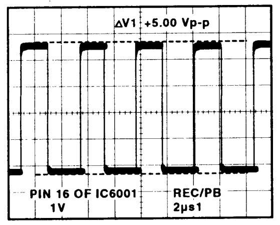
WF32



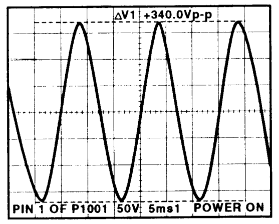
WF33



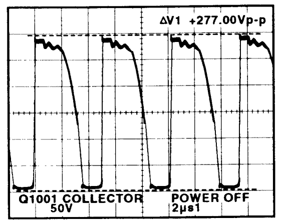
WF34



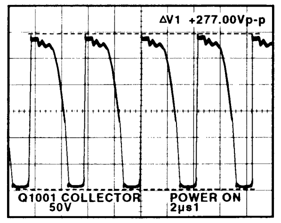
WF35



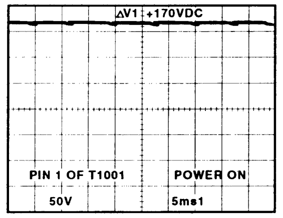
WF37



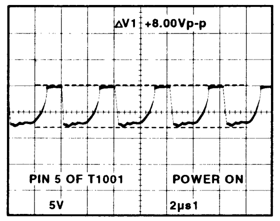
WF38



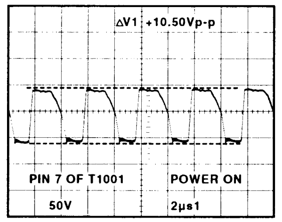
WF38



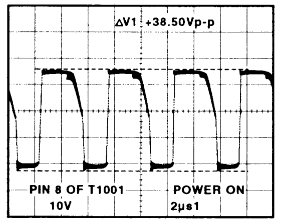
WF39



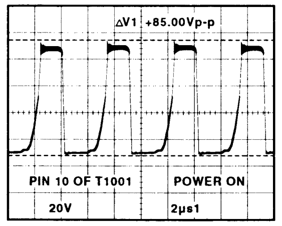
WF40



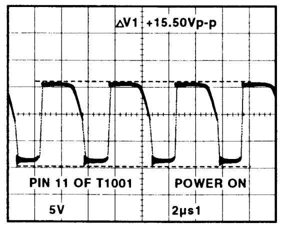
WF41



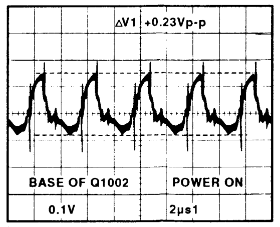
WF42



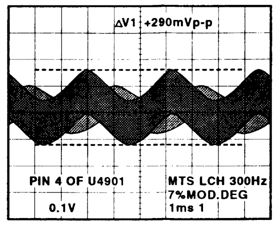
WF43



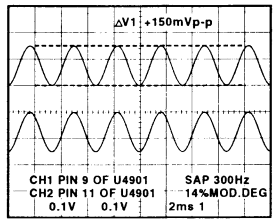
WF44



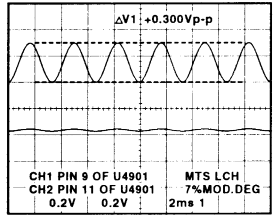
WF45



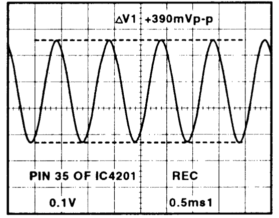
WF46 (F,G,H)



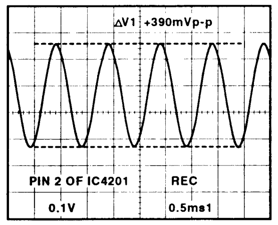
CH1 WF47 (F,G,H)
CH2 WF48 (F,G,H)



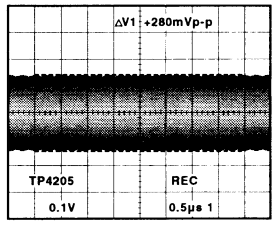
CH1 WF47 (F,G,H)
CH2 WF48 (F,G,H)



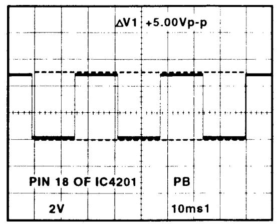
WF49 (F,G,H)



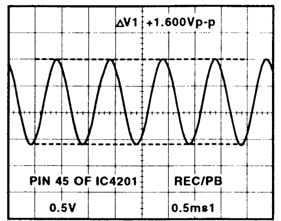
WF50 (F,G,H)



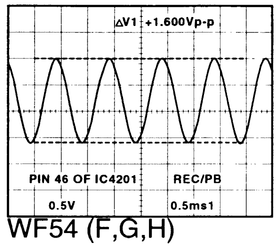
WF51 (F,G,H)



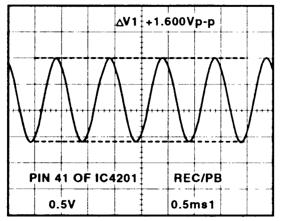
WF52 (F,G,H)



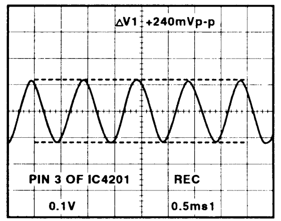
WF53 (F,G,H)



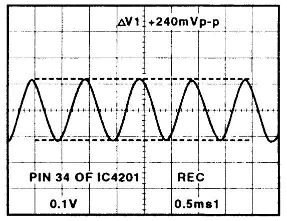
WF54 (F,G,H)



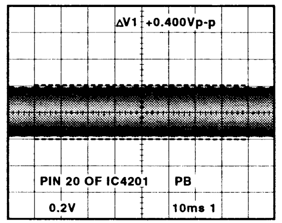
WF55 (F,G,H)



WF56 (F,G,H)

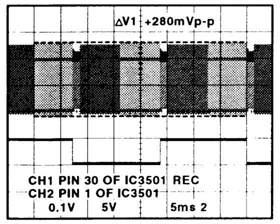


WF57 (F,G,H)

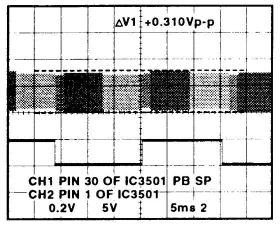


WF58 (F,G,H)

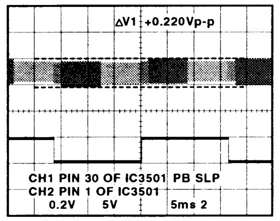
HEAD AMP C.B.A.(A)



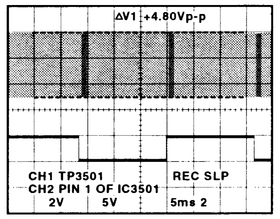
CH1 WF59
CH2 WF60



CH1 WF59
CH2 WF60

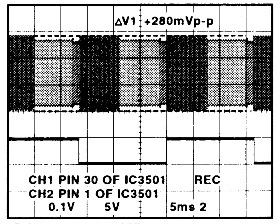


CH1 WF59
CH2 WF60

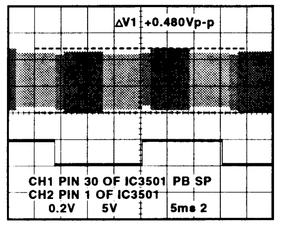


CH1 WF61
CH2 WF60

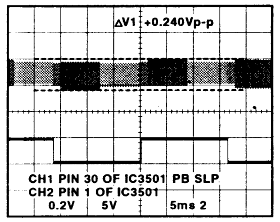
HEAD AMP C.B.A. (B,C,D,E)



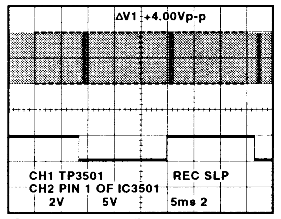
CH1 WF62
CH2 WF63



CH1 WF62
CH2 WF63

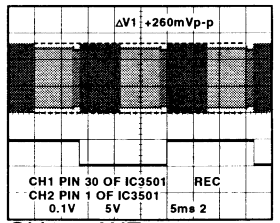


CH1 WF62
CH2 WF63

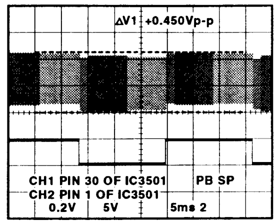


CH1 WF64
CH2 WF63

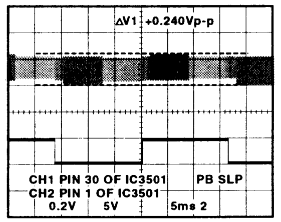
Hi-Fi AUDIO/VIDEO HEAD AMP C.B.A. (F,G,H)



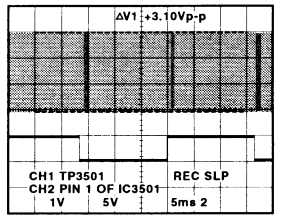
CH1 WF65
CH2 WF66



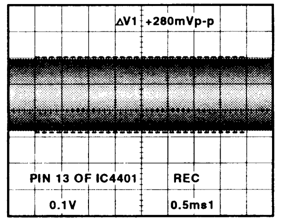
CH1 WF65
CH2 WF66



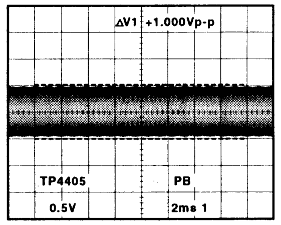
CH1 WF65
CH2 WF66



CH1 WF67
CH2 WF66



WF68



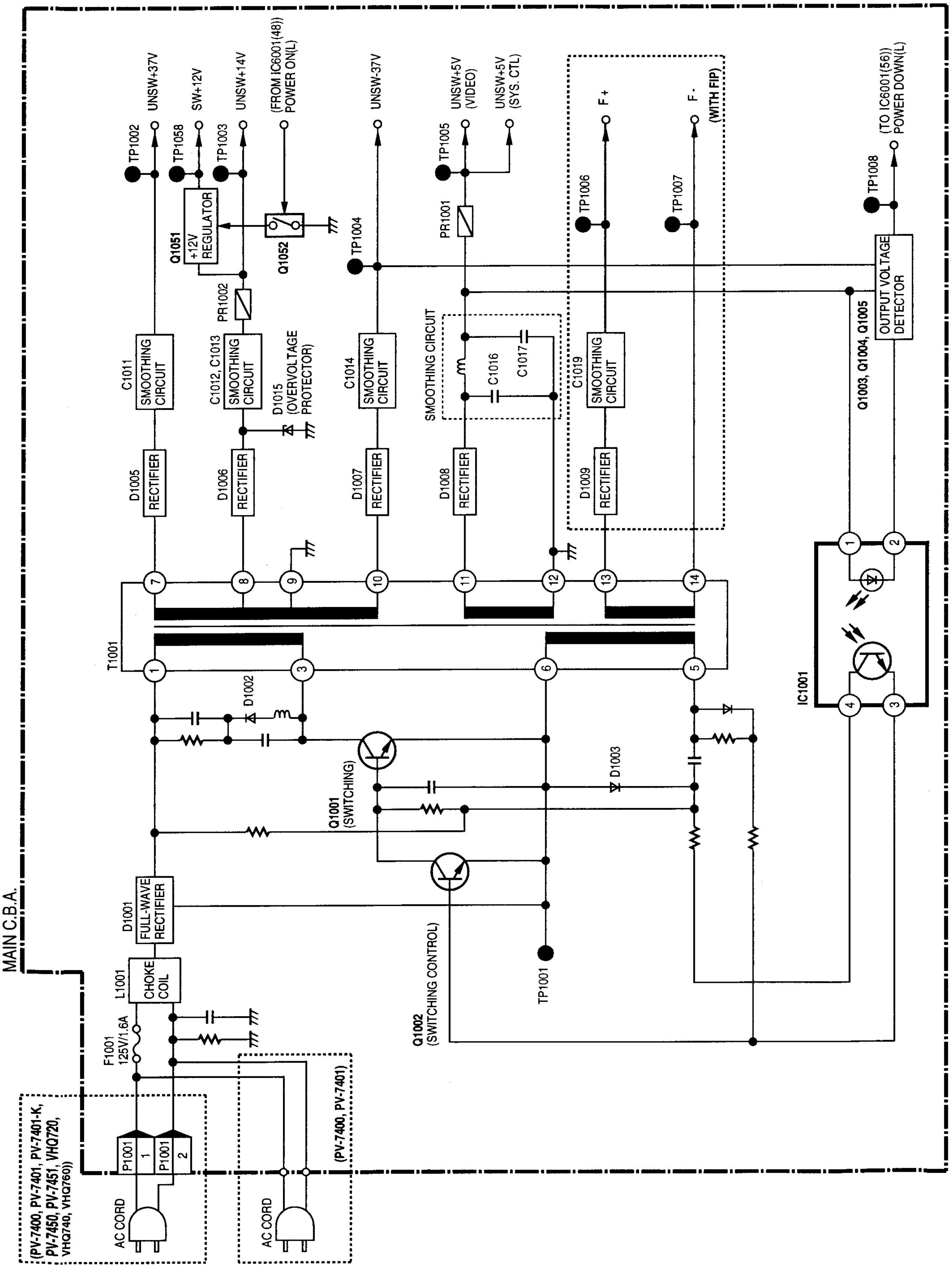
WF69

COMPARISON CHART
OF MODELS & MARKS

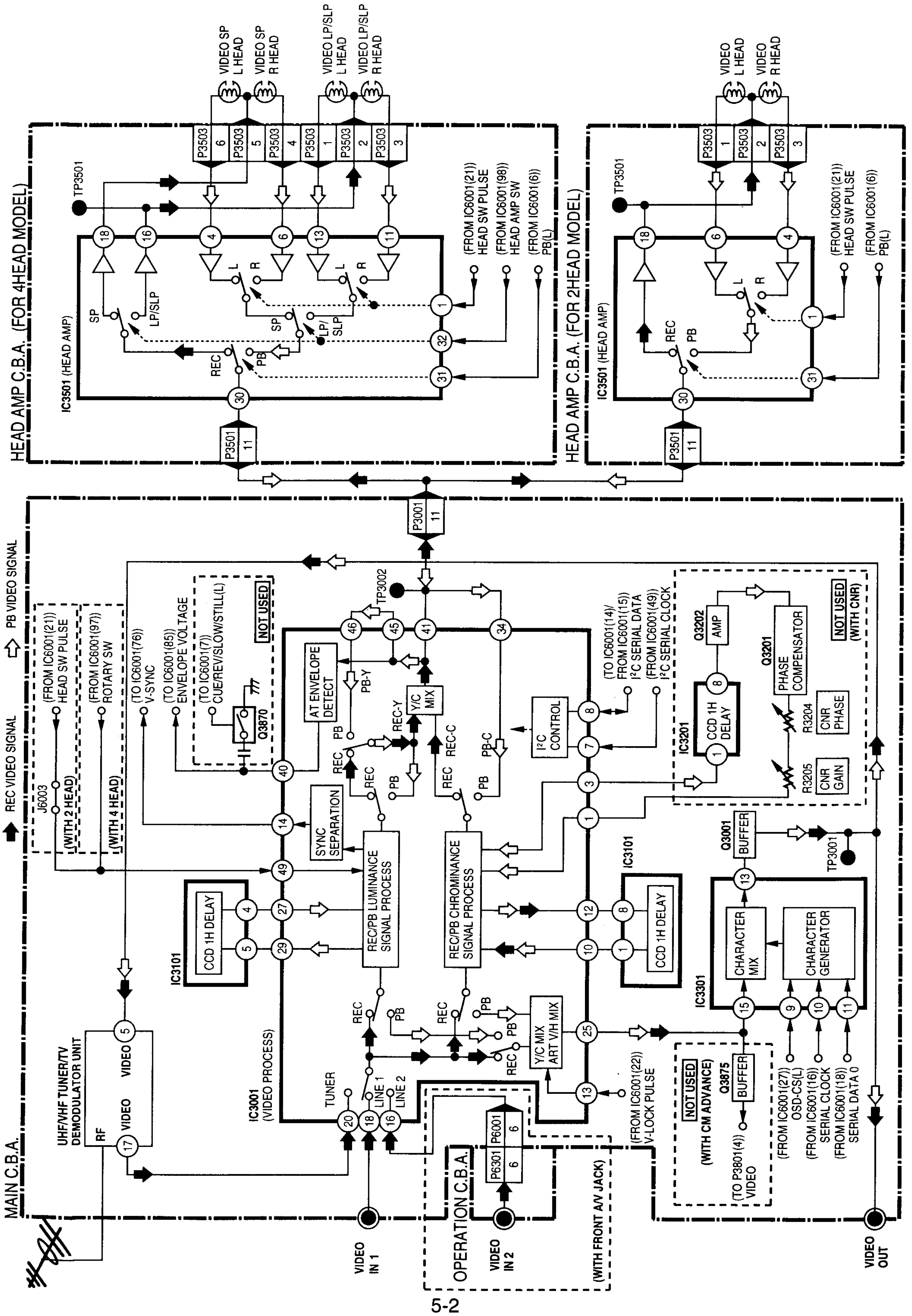
MODEL	MARK
VHQ720	A
PV-7400	B
PV-7401	C
PV-7401-K	D
VHQ740	E
PV-7450	F
PV-7451	G
VHQ760	H
Not Used	Z

BLOCK DIAGRAMS

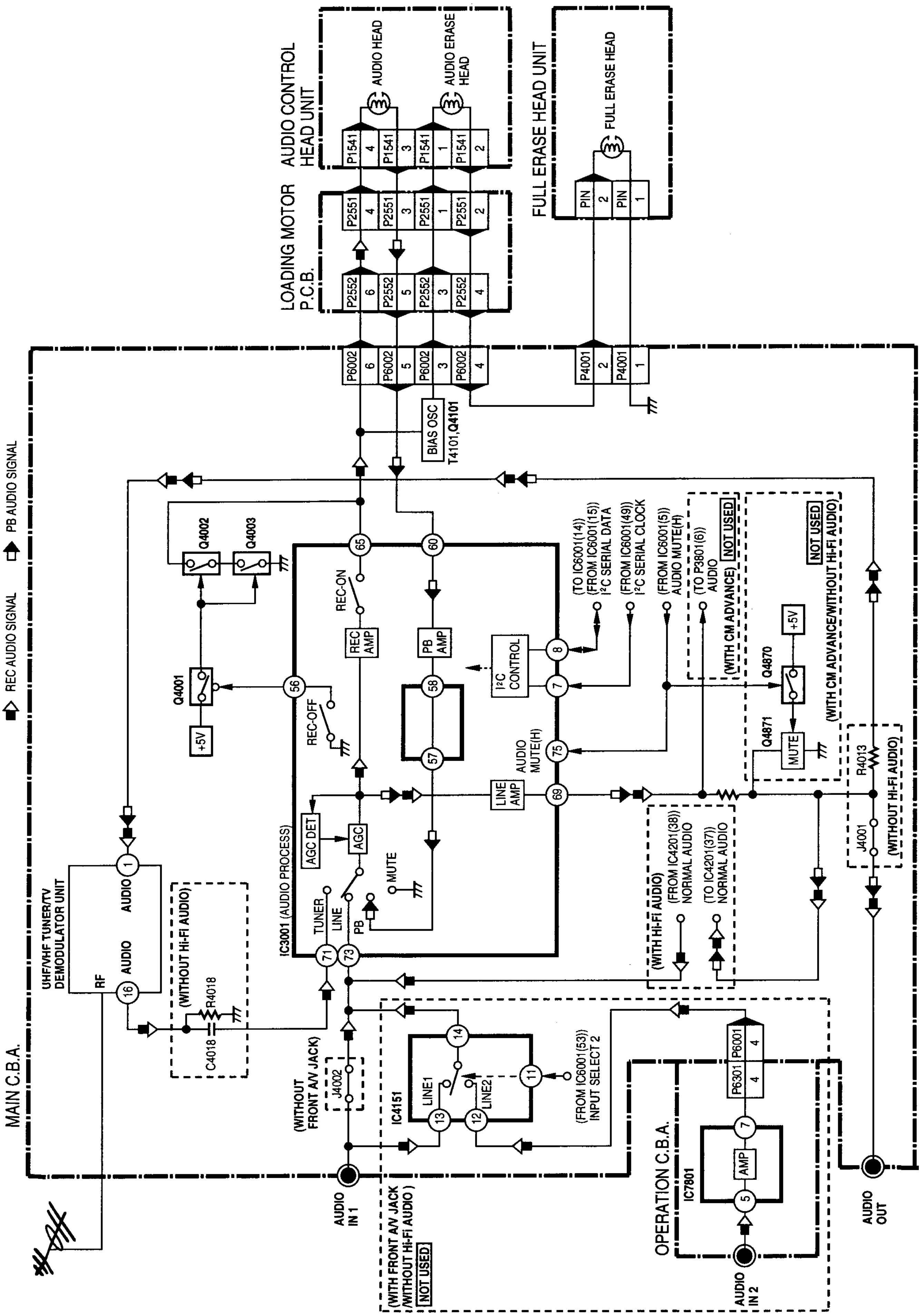
POWER SUPPLY BLOCK DIAGRAM


UNSW+37V
TP1002
SW+12V
TP1058
UNSW+14V
TP1003
(FROM IC6001(48))
POWER ON(L)
UNSW-37V
UNSW+5V
(VIDEO)
TP1005
UNSW+5V
(SYS. CTL)
F+
F-
(WITH FIP)
(TO IC6001(56))
POWER DOWN(L)
TP1008
Q1051
+12V
REGULATOR
Q1052
TP1004
PR1001
TP1006
TP1007
PR1002
C1011
SMOOTHING
CIRCUIT
C1012, C1013
SMOOTHING
CIRCUIT
D1015
(OVERVOLTAGE
PROTECTOR)
C1014
SMOOTHING
CIRCUIT
SMOOTHING CIRCUIT
C1016
C1017
C1019
SMOOTHING
CIRCUIT
OUTPUT VOLTAGE
DETECTOR
Q1003, Q1004, Q1005
D1005
RECTIFIER
D1006
RECTIFIER
D1007
RECTIFIER
D1008
RECTIFIER
D1009
RECTIFIER
7
8
9
10
11
12
13
14
T1001
1
3
6
5
1
2
4
3
IC1001
D1002
D1003
Q1001
(SWITCHING)
Q1002
(SWITCHING CONTROL)
MAIN C.B.A.
D1001
FULL-WAVE
RECTIFIER
L1001
CHOKE
COIL
TP1001
F1001
125V/1.6A
P1001
1
P1001
2
AC CORD
(PV-7400, PV-7401, PV-7401-K,
PV-7450, PV-7451, VHQ720,
VHQ740, VHQ760))
AC CORD
(PV-7400, PV-7401)

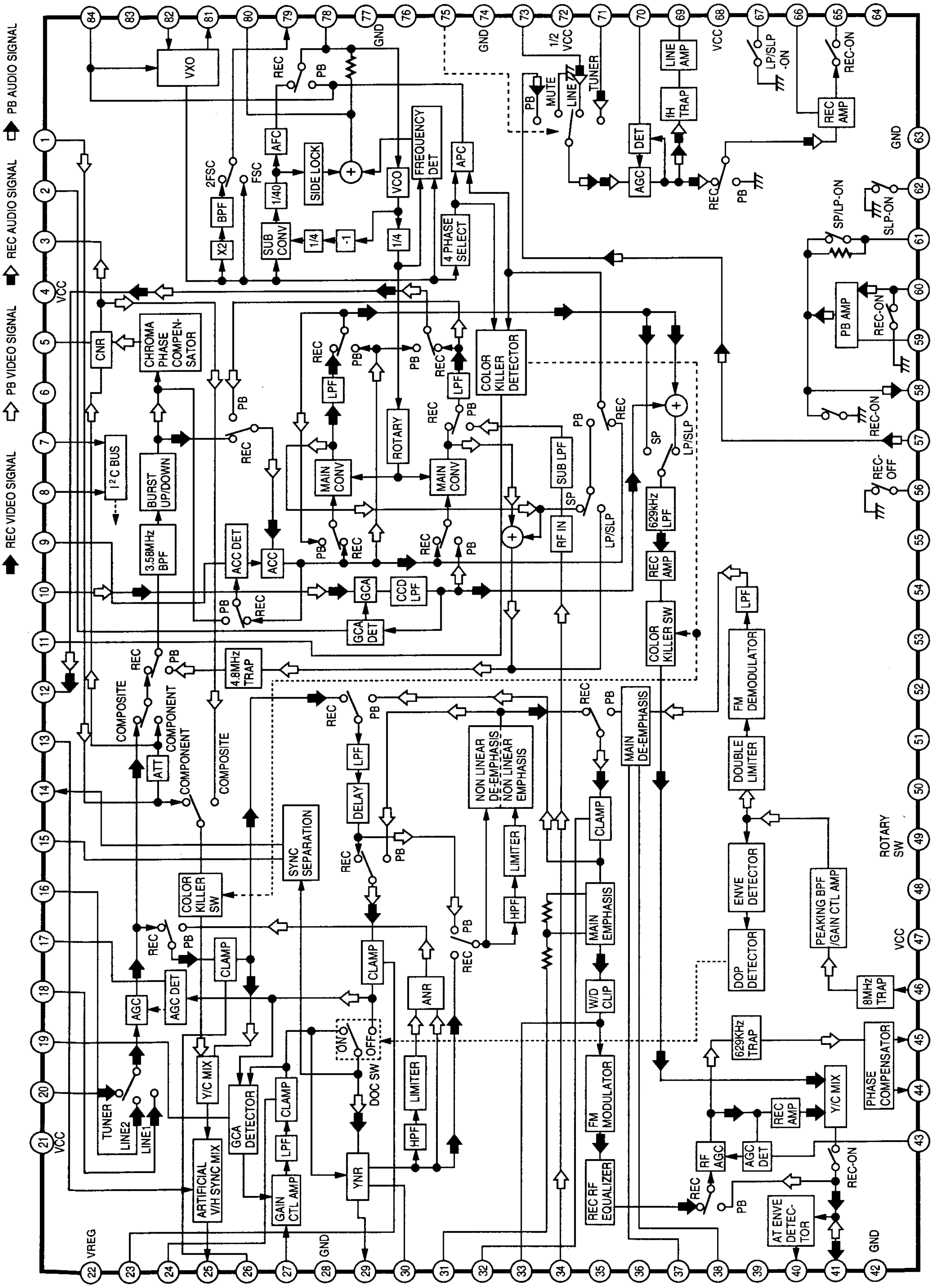
VIDEO SIGNAL PATH BLOCK DIAGRAM


HEAD AMP C.B.A. (FOR 4HEAD MODEL)
HEAD AMP C.B.A. (FOR 2HEAD MODEL)
IC3501 (HEAD AMP)
VIDEO SP L HEAD
VIDEO SP R HEAD
VIDEO LP/SLP L HEAD
VIDEO LP/SLP R HEAD
VIDEO L HEAD
VIDEO R HEAD
P3503
P3501
TP3501
SP
LP/SLP
REC
PB
(FROM IC6001(21)) HEAD SW PULSE
(FROM IC6001(98)) HEAD AMP SW
(FROM IC6001(6)) PB(L)
REC VIDEO SIGNAL
PB VIDEO SIGNAL
MAIN C.B.A.
P3001
TP3002
TP3001
IC3001 (VIDEO PROCESS)
AT ENVELOPE DETECT
Y/C MIX
REC-Y
REC-C
PB-Y
PB-C
I²C CONTROL
SYNC SEPARATION
REC/PB LUMINANCE SIGNAL PROCESS
REC/PB CHROMINANCE SIGNAL PROCESS
Y/C MIX ART V/H MIX
IC3101
CCD 1H DELAY
IC3201
Q3202 AMP
Q3201 PHASE COMPENSATOR
R3204 CNR PHASE
R3205 CNR GAIN
NOT USED (WITH CNR)
Q3870
NOT USED
(FROM IC6001(21)) HEAD SW PULSE
(FROM IC6001(97)) ROTARY SW
(TO IC6001(76)) V-SYNC
(TO IC6001(85)) ENVELOPE VOLTAGE
(TO IC6001(7)) CUE/REV/SLOW/STILL(L)
(TO IC6001(14)/ FROM IC6001(15)) I²C SERIAL DATA
(FROM IC6001(49)) I²C SERIAL CLOCK
J6003
(WITH 2 HEAD)
(WITH 4 HEAD)
Q3001 BUFFER
IC3301
CHARACTER MIX
CHARACTER GENERATOR
(FROM IC6001(27)) OSD-CS(L)
(FROM IC6001(16)) SERIAL CLOCK
(FROM IC6001(18)) SERIAL DATA 0
Q3875 BUFFER
NOT USED (WITH CM ADVANCE)
(TO P3801(4)) VIDEO
(FROM IC6001(22)) V-LOCK PULSE
UHF/VHF TUNER/TV DEMODULATOR UNIT
RF
VIDEO
TUNER
LINE 1
LINE 2
OPERATION C.B.A.
P6001
P6301
(WITH FRONT A/V JACK)
VIDEO IN 1
VIDEO IN 2
VIDEO OUT

AUDIO SIGNAL PATH BLOCK DIAGRAM


REC AUDIO SIGNAL
PB AUDIO SIGNAL
MAIN C.B.A.
LOADING MOTOR P.C.B.
AUDIO CONTROL HEAD UNIT
AUDIO HEAD
AUDIO ERASE HEAD
FULL ERASE HEAD UNIT
FULL ERASE HEAD
P1541
P2551
P2552
P6002
P4001
PIN
BIAS OSC
T4101,Q4101
Q4002
Q4003
Q4001
+5V
UHF/VHF TUNER/TV DEMODULATOR UNIT
RF
AUDIO
(WITHOUT Hi-Fi AUDIO)
R4018
C4018
IC3001 (AUDIO PROCESS)
REC-ON
REC AMP
PB AMP
REC-OFF
I²C CONTROL
AGC DET
AGC
MUTE
TUNER
LINE
PB
LINE AMP
AUDIO MUTE(H)
(TO IC6001(14))
(FROM IC6001(15))
I²C SERIAL DATA
(FROM IC6001(49))
I²C SERIAL CLOCK
(FROM IC6001(5))
AUDIO MUTE(H)
(TO P3801(6))
AUDIO
(WITH CM ADVANCE)
NOT USED
Q4870
Q4871
MUTE
(WITH CM ADVANCE/WITHOUT Hi-Fi AUDIO)
R4013
J4001
(WITHOUT Hi-Fi AUDIO)
(WITH Hi-Fi AUDIO)
(FROM IC4201(38))
NORMAL AUDIO
(TO IC4201(37))
NORMAL AUDIO
(WITHOUT FRONT A/V JACK)
J4002
IC4151
LINE1
LINE2
(FROM IC6001(53))
INPUT SELECT 2
P6301
P6001
OPERATION C.B.A.
IC7801
AMP
AUDIO IN 1
AUDIO IN 2
AUDIO OUT
(WITH FRONT A/V JACK /WITHOUT Hi-Fi AUDIO)
NOT USED

IC3001 VIDEO/AUDIO PROCESS IC-BLOCK DIAGRAM, AN3475FBP


REC VIDEO SIGNAL
PB VIDEO SIGNAL
REC AUDIO SIGNAL
PB AUDIO SIGNAL
VXO
REC
PB
GND
AFC
SIDE LOCK
VCO
FREQUENCY DET
APC
2FSC
FSC
BPF
X2
1/40
SUB CONV
1/4
-1
4 PHASE SELECT
1/2 VCC
TUNER
MUTE
LINE
DET
AGC
LINE AMP
1H TRAP
VCC
LP/SLP -ON
REC-ON
REC AMP
SP/LP-ON
SLP-ON
PB AMP
CNR
CHROMA PHASE COMPEN-SATOR
I²C BUS
BURST UP/DOWN
3.58MHz BPF
ACC DET
ACC
LPF
ROTARY
MAIN CONV
COLOR KILLER DETECTOR
SUB LPF
RF IN
SP
LP/SLP
629kHz LPF
REC-OFF
GCA
CCD LPF
GCA DET
4.8MHz TRAP
COLOR KILLER SW
FM DEMODULATOR
MAIN DE-EMPHASIS
NON LINEAR DE-EMPHASIS NON LINEAR EMPHASIS
DELAY
COMPOSITE
COMPONENT
ATT
SYNC SEPARATION
DOUBLE LIMITER
ROTARY SW
ENVE DETECTOR
PEAKING BPF /GAIN CTL AMP
LIMITER
HPF
CLAMP
MAIN EMPHASIS
DOP DETECTOR
8MHz TRAP
W/D CLIP
ANR
ON
OFF
DOC SW
629KHz TRAP
PHASE COMPENSATOR
Y/C MIX
GCA DETECTOR
FM MODULATOR
REC AMP
RF AGC
AGC DET
TUNER
LINE2
LINE1
ARTIFICIAL V/H SYNC MIX
GAIN CTL AMP
YNR
REC RF EQUALIZER
AT ENVE DETEC-TOR
VREG
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
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25
26
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33
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38
39
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46
47
48
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51
52
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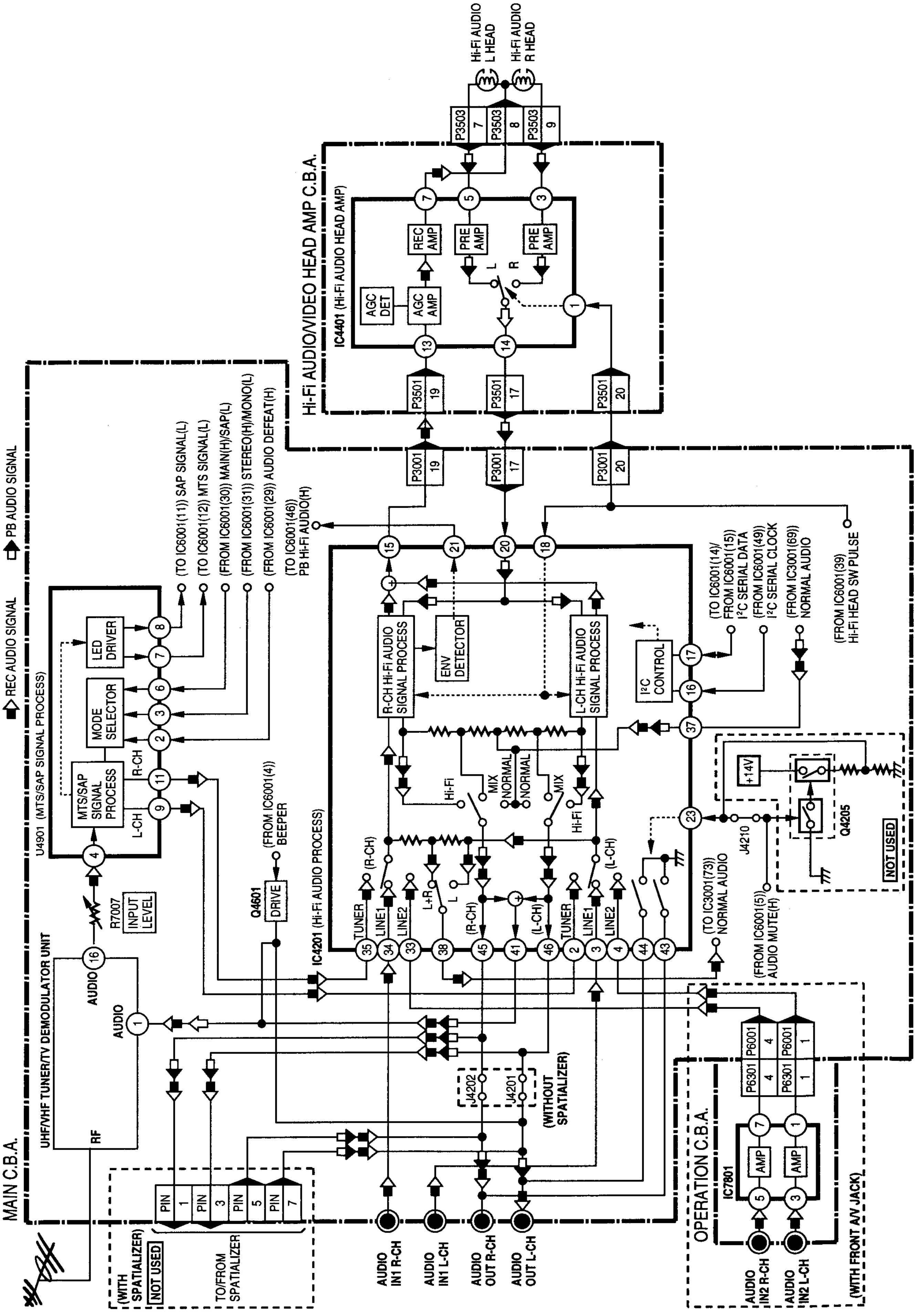
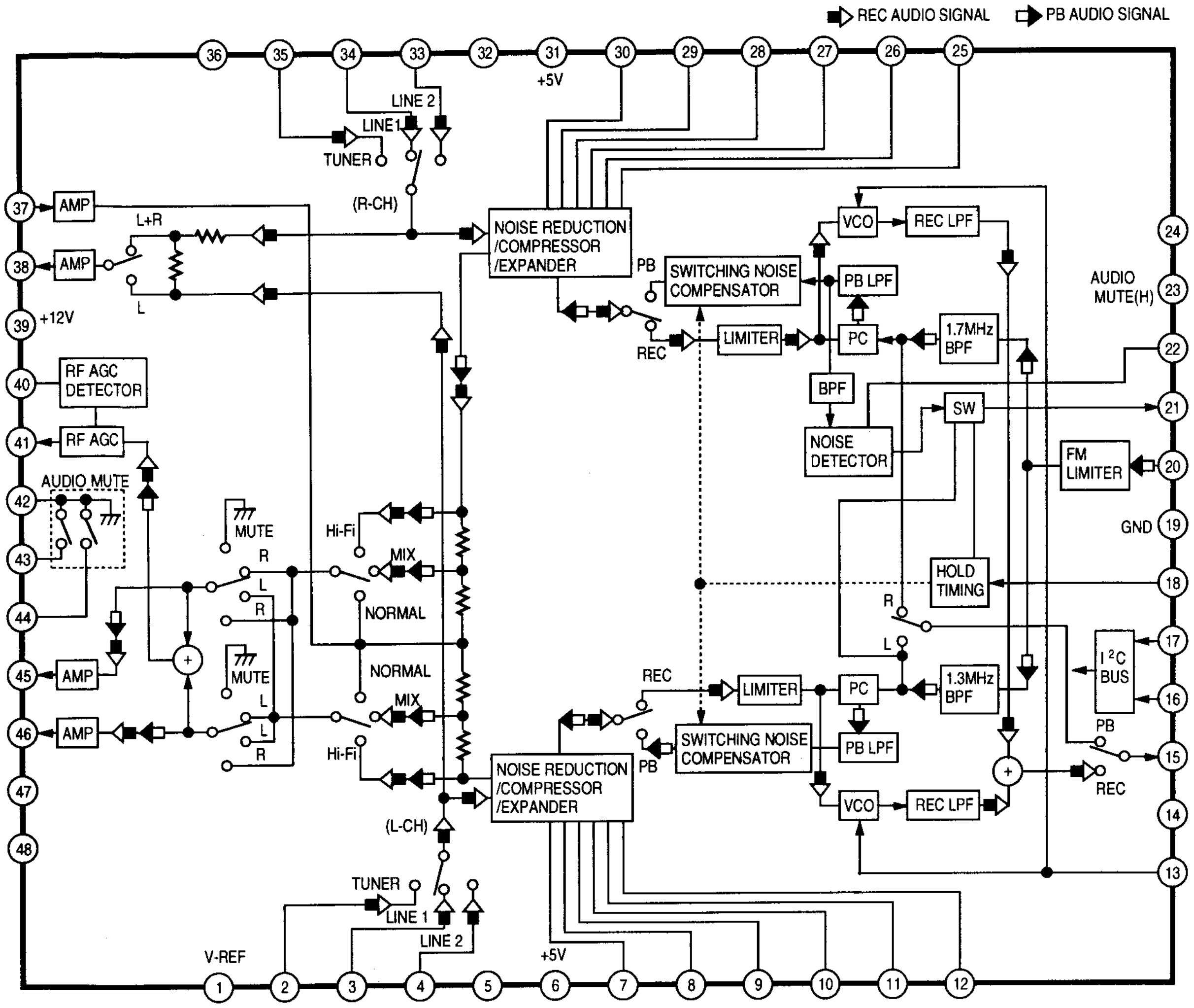
83
84

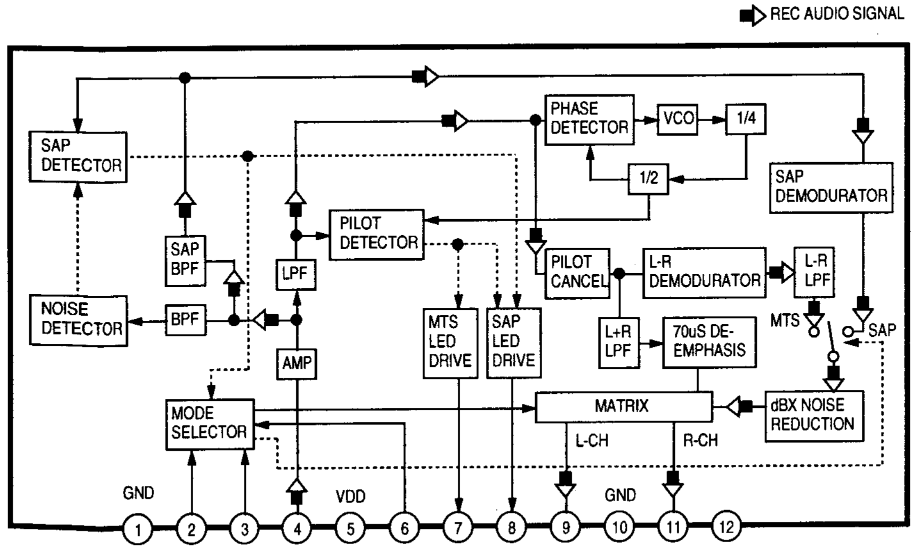
Hi-Fi AUDIO SIGNAL PATH BLOCK DIAGRAM


REC AUDIO SIGNAL
PB AUDIO SIGNAL
MAIN C.B.A.
UHF/VHF TUNER/TV DEMODULATOR UNIT
RF
AUDIO
AUDIO
U4901 (MTS/SAP SIGNAL PROCESS)
MTS/SAP SIGNAL PROCESS
L-CH
R-CH
MODE SELECTOR
LED DRIVER
R7007 INPUT LEVEL
Q4601 DRIVE
(FROM IC6001(4)) BEEPER
(TO IC6001(11)) SAP SIGNAL(L)
(TO IC6001(12)) MTS SIGNAL(L)
(FROM IC6001(30)) MAIN(H)/SAP(L)
(FROM IC6001(31)) STEREO(H)/MONO(L)
(FROM IC6001(29)) AUDIO DEFEAT(H)
(TO IC6001(46)) PB Hi-Fi AUDIO(H)
IC4201 (Hi-Fi AUDIO PROCESS)
R-CH Hi-Fi AUDIO SIGNAL PROCESS
L-CH Hi-Fi AUDIO SIGNAL PROCESS
ENV DETECTOR
I²C CONTROL
TUNER
LINE1
LINE2
L+R
L
(R-CH)
(L-CH)
Hi-Fi
MIX
NORMAL
NORMAL
MIX
Hi-Fi
(TO IC6001(14)/ FROM IC6001(15)) I²C SERIAL DATA
(FROM IC6001(49)) I²C SERIAL CLOCK
(FROM IC3001(69)) NORMAL AUDIO
(FROM IC6001(39)) Hi-Fi HEAD SW PULSE
(TO IC3001(73)) NORMAL AUDIO
(FROM IC6001(5)) AUDIO MUTE(H)
J4210
+14V
Q4205
NOT USED
J4202
J4201
(WITHOUT SPATIALIZER)
(WITH SPATIALIZER)
NOT USED
TO/FROM SPATIALIZER
PIN 1
PIN 3
PIN 5
PIN 7
AUDIO IN1 R-CH
AUDIO IN1 L-CH
AUDIO OUT R-CH
AUDIO OUT L-CH
P3001 19
P3001 17
P3001 20
P3501 19
P3501 17
P3501 20
Hi-Fi AUDIO/VIDEO HEAD AMP C.B.A.
IC4401 (Hi-Fi AUDIO HEAD AMP)
AGC DET
AGC AMP
REC AMP
PRE AMP
PRE AMP
L
R
P3503 7
P3503 8
P3503 9
Hi-Fi AUDIO L HEAD
Hi-Fi AUDIO R HEAD
OPERATION C.B.A.
IC7801
AMP
AMP
P6001 4
P6001 1
P6301 4
P6301 1
AUDIO IN2 R-CH
AUDIO IN2 L-CH
(WITH FRONT A/V JACK)

IC4201 Hi-Fi AUDIO PROCESS IC-BLOCK DIAGRAM, AN3962FB-V

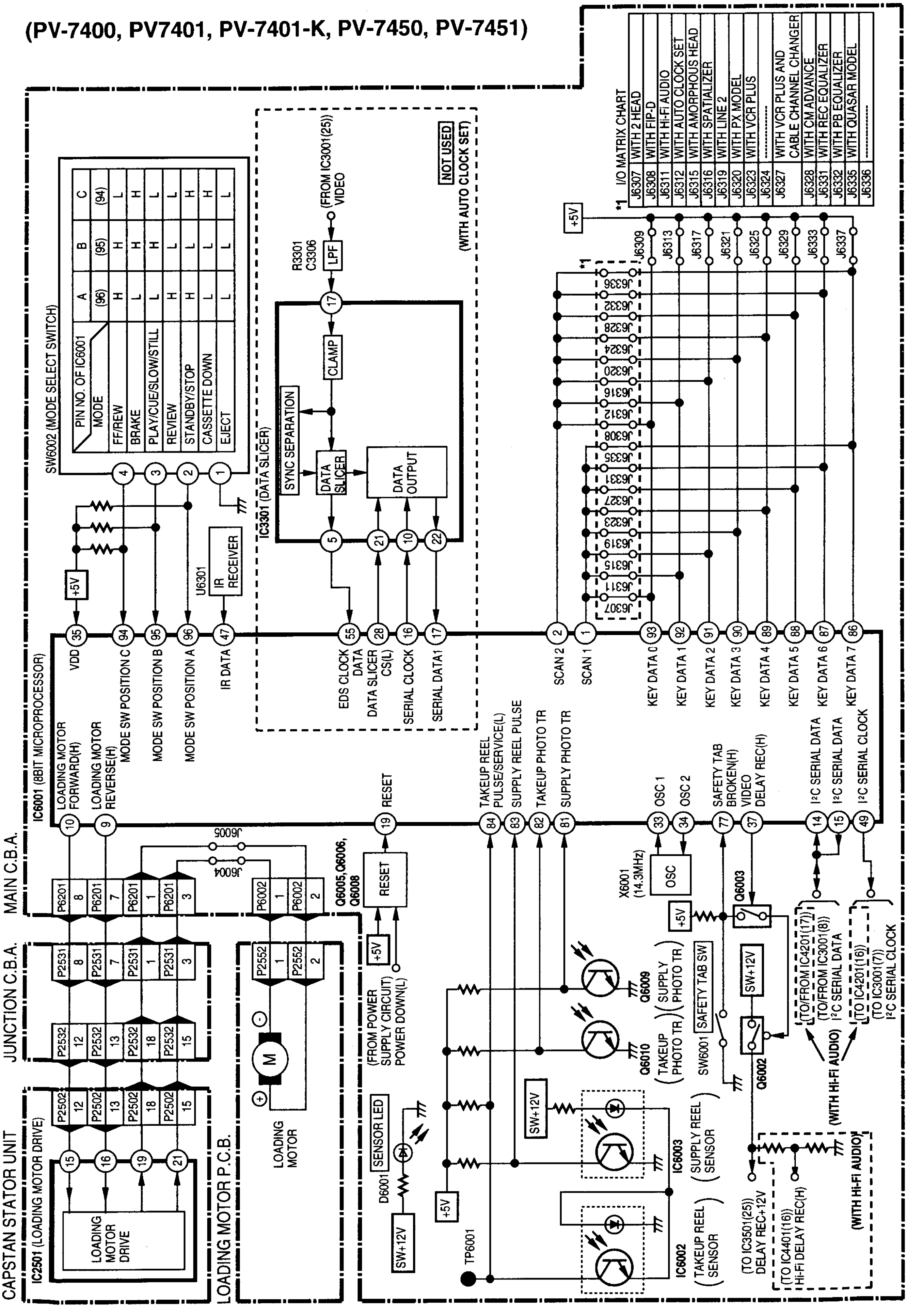

REC AUDIO SIGNAL
PB AUDIO SIGNAL
36
35
34
33
32
31
30
29
28
27
26
25
+5V
LINE 2
LINE1
TUNER
(R-CH)
NOISE REDUCTION /COMPRESSOR /EXPANDER
PB
REC
SWITCHING NOISE COMPENSATOR
LIMITER
VCO
REC LPF
PB LPF
PC
1.7MHz BPF
BPF
NOISE DETECTOR
SW
FM LIMITER
HOLD TIMING
I²C BUS
AUDIO MUTE(H)
GND
24
23
22
21
20
19
18
17
16
15
14
13
37
38
39
40
41
42
43
44
45
46
47
48
AMP
L+R
L
+12V
RF AGC DETECTOR
RF AGC
AUDIO MUTE
MUTE
R
L
Hi-Fi
MIX
NORMAL
R
L
1.3MHz BPF
PB
REC
(L-CH)
TUNER
LINE 1
LINE 2
V-REF
+5V
1
2
3
4
5
6
7
8
9
10
11
12

U4901 MTS/SAP AUDIO PROCESS IC-BLOCK DIAGRAM, VCRS0213


REC AUDIO SIGNAL
SAP DETECTOR
PHASE DETECTOR
VCO
1/4
1/2
SAP DEMODURATOR
PILOT DETECTOR
SAP BPF
LPF
PILOT CANCEL
L-R DEMODURATOR
L-R LPF
NOISE DETECTOR
BPF
MTS LED DRIVE
SAP LED DRIVE
L+R LPF
70uS DE-EMPHASIS
MTS
SAP
AMP
MODE SELECTOR
MATRIX
dBX NOISE REDUCTION
L-CH
R-CH
GND
VDD
GND
1
2
3
4
5
6
7
8
9
10
11
12

SYSTEM CONTROL BLOCK DIAGRAM

(PV-7400, PV7401, PV-7401-K, PV-7450, PV-7451)


CAPSTAN STATOR UNIT
IC2501 (LOADING MOTOR DRIVE)
LOADING MOTOR DRIVE
LOADING MOTOR P.C.B.
LOADING MOTOR
M
JUNCTION C.B.A.
MAIN C.B.A.
P2502
P2532
P2531
P6201
P2552
P6002
J6004
J6005
IC6001 (8BIT MICROPROCESSOR)
LOADING MOTOR FORWARD(H)
LOADING MOTOR REVERSE(H)
MODE SW POSITION C
MODE SW POSITION B
MODE SW POSITION A
VDD
IR DATA
U6301
IR RECEIVER
+5V
SW6002 (MODE SELECT SWITCH)
RESET
Q6005,Q6006, Q6008
(FROM POWER SUPPLY CIRCUIT) POWER DOWN(L)
IC3301 (DATA SLICER)
NOT USED
(WITH AUTO CLOCK SET)
(FROM IC3001(25)) VIDEO
R3301 C3306
LPF
CLAMP
SYNC SEPARATION
DATA SLICER
DATA OUTPUT
EDS CLOCK
DATA SLICER CS(L)
SERIAL CLOCK
SERIAL DATA1
SCAN 2
SCAN 1
KEY DATA 0
KEY DATA 1
KEY DATA 2
KEY DATA 3
KEY DATA 4
KEY DATA 5
KEY DATA 6
KEY DATA 7
TAKEUP REEL PULSE/SERVICE(L)
SUPPLY REEL PULSE
TAKEUP PHOTO TR
SUPPLY PHOTO TR
OSC 1
OSC 2
X6001 (14.3MHz)
OSC
SAFETY TAB BROKEN(H)
VIDEO DELAY REC(H)
I²C SERIAL DATA
I²C SERIAL CLOCK
Q6003
Q6002
SW+12V
SW6001
SAFETY TAB SW
(TO/FROM IC4201(17)) (TO/FROM IC3001(8)) I²C SERIAL DATA
(TO IC4201(16)) (TO IC3001(7)) I²C SERIAL CLOCK
(WITH Hi-Fi AUDIO)
Q6009 (SUPPLY PHOTO TR)
Q6010 (TAKEUP PHOTO TR)
IC6003 (SUPPLY REEL SENSOR)
IC6002 (TAKEUP REEL SENSOR)
(TO IC3501(25)) DELAY REC+12V
(TO IC4401(16)) Hi-Fi DELAY REC(H)
D6001
SENSOR LED
TP6001
J6307 J6311 J6315 J6319 J6323 J6327 J6331 J6335
J6308 J6312 J6316 J6320 J6324 J6328 J6332 J6336
J6309 J6313 J6317 J6321 J6325 J6329 J6333 J6337
*1

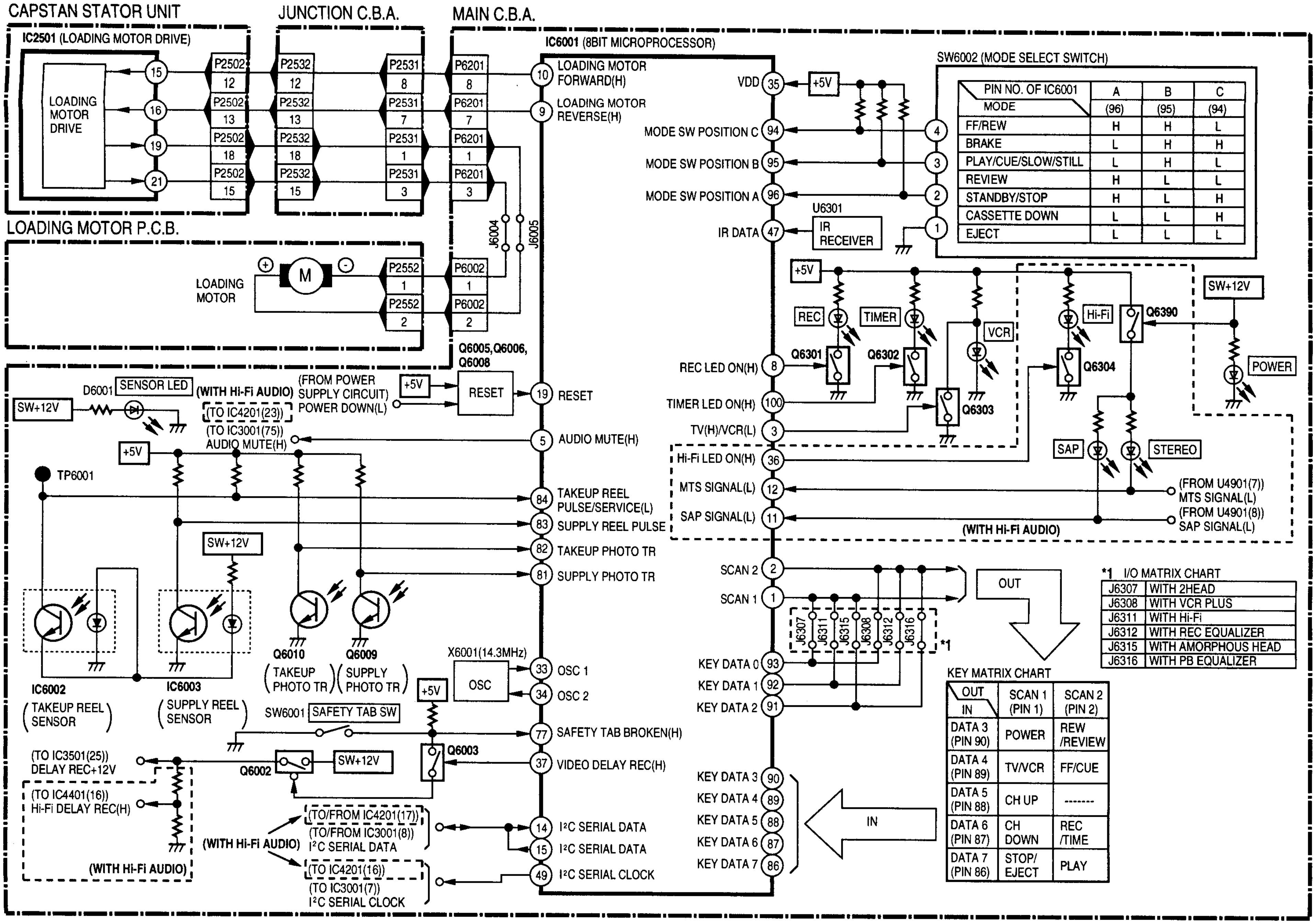
SW6002 (MODE SELECT SWITCH)

PIN NO. OF IC6001 / MODE	A (96)	B (95)	C (94)
FF/REW	H	H	L
BRAKE	L	H	H
PLAY/CUE/SLOW/STILL	L	H	L
REVIEW	H	L	L
STANDBY/STOP	H	L	H
CASSETTE DOWN	L	L	H
EJECT	L	L	L

*1 I/O MATRIX CHART

J6307	WITH 2 HEAD
J6308	WITH FIP-D
J6311	WITH Hi-Fi AUDIO
J6312	WITH AUTO CLOCK SET
J6315	WITH AMORPHOUS HEAD
J6316	WITH SPATIALIZER
J6319	WITH LINE 2
J6320	WITH PX MODEL
J6323	WITH VCR PLUS
J6324	--------------
J6327	WITH VCR PLUS AND CABLE CHANNEL CHANGER
J6328	WITH CM ADVANCE
J6331	WITH REC EQUALIZER
J6332	WITH PB EQUALIZER
J6335	WITH QUASAR MODEL
J6336	--------------

SYSTEM CONTROL BLOCK DIAGRAM (VHQ720, VHQ740, VHQ760)



CAPSTAN STATOR UNIT
IC2501 (LOADING MOTOR DRIVE)
LOADING MOTOR DRIVE
JUNCTION C.B.A.
MAIN C.B.A.
LOADING MOTOR P.C.B.
LOADING MOTOR
M
P2502 12
P2502 13
P2502 18
P2502 15
P2532 12
P2532 13
P2532 18
P2532 15
P2531 8
P2531 7
P2531 1
P2531 3
P6201 8
P6201 7
P6201 1
P6201 3
P2552 1
P2552 2
P6002 1
P6002 2
J6004
J6005
IC6001 (8BIT MICROPROCESSOR)
LOADING MOTOR FORWARD(H)
LOADING MOTOR REVERSE(H)
VDD
+5V
MODE SW POSITION C
MODE SW POSITION B
MODE SW POSITION A
IR DATA
U6301
IR RECEIVER
SW6002 (MODE SELECT SWITCH)
REC LED ON(H)
TIMER LED ON(H)
TV(H)/VCR(L)
Hi-Fi LED ON(H)
MTS SIGNAL(L)
SAP SIGNAL(L)
REC
TIMER
VCR
Hi-Fi
POWER
SAP
STEREO
Q6301
Q6302
Q6303
Q6304
Q6390
SW+12V
(FROM U4901(7)) MTS SIGNAL(L)
(FROM U4901(8)) SAP SIGNAL(L)
(WITH Hi-Fi AUDIO)
SCAN 2
SCAN 1
OUT
IN
J6307
J6311
J6315
J6308
J6312
J6316
*1
KEY DATA 0
KEY DATA 1
KEY DATA 2
KEY DATA 3
KEY DATA 4
KEY DATA 5
KEY DATA 6
KEY DATA 7
Q6005, Q6006, Q6008
RESET
(FROM POWER SUPPLY CIRCUIT) POWER DOWN(L)
D6001
SENSOR LED
(WITH Hi-Fi AUDIO)
(TO IC4201(23))
(TO IC3001(75)) AUDIO MUTE(H)
AUDIO MUTE(H)
TP6001
TAKEUP REEL PULSE/SERVICE(L)
SUPPLY REEL PULSE
TAKEUP PHOTO TR
SUPPLY PHOTO TR
Q6010
(TAKEUP PHOTO TR)
Q6009
(SUPPLY PHOTO TR)
IC6002
(TAKEUP REEL SENSOR)
IC6003
(SUPPLY REEL SENSOR)
X6001(14.3MHz)
OSC
OSC 1
OSC 2
SW6001
SAFETY TAB SW
SAFETY TAB BROKEN(H)
Q6003
Q6002
VIDEO DELAY REC(H)
(TO IC3501(25)) DELAY REC+12V
(TO IC4401(16)) Hi-Fi DELAY REC(H)
(WITH Hi-Fi AUDIO)
(TO/FROM IC4201(17))
(TO/FROM IC3001(8)) I²C SERIAL DATA
(TO IC4201(16))
(TO IC3001(7)) I²C SERIAL CLOCK
I²C SERIAL DATA
I²C SERIAL DATA
I²C SERIAL CLOCK
15
16
19
21
10
9
35
94
95
96
47
4
3
2
1
8
100
3
36
12
11
2
1
93
92
91
90
89
88
87
86
19
5
84
83
82
81
33
34
77
37
14
15
49

SW6002 (MODE SELECT SWITCH)

PIN NO. OF IC6001 / MODE	A (96)	B (95)	C (94)
FF/REW	H	H	L
BRAKE	L	H	H
PLAY/CUE/SLOW/STILL	L	H	L
REVIEW	H	L	L
STANDBY/STOP	H	L	H
CASSETTE DOWN	L	L	H
EJECT	L	L	L

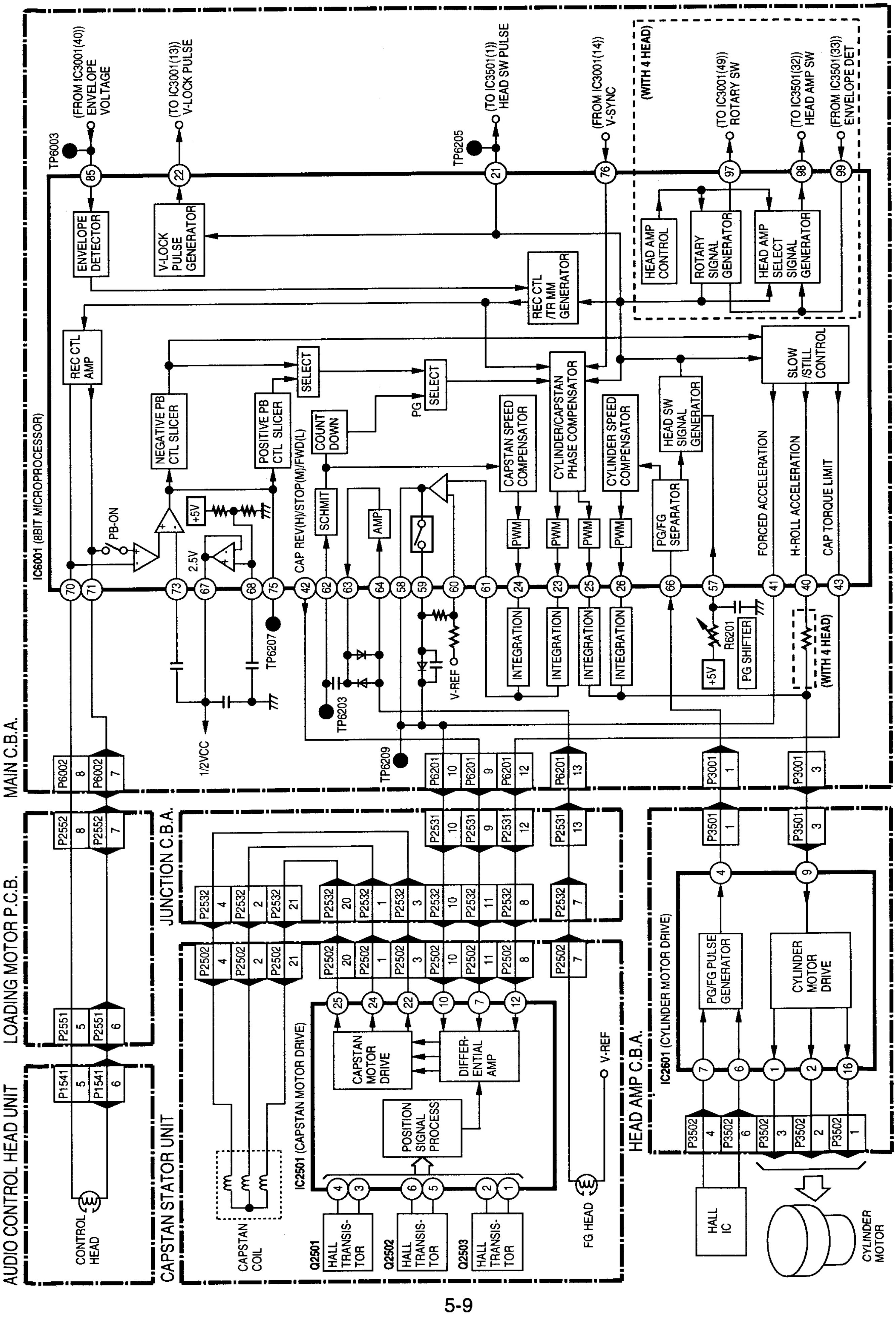
KEY MATRIX CHART

OUT / IN	SCAN 1 (PIN 1)	SCAN 2 (PIN 2)
DATA 3 (PIN 90)	POWER	REW /REVIEW
DATA 4 (PIN 89)	TV/VCR	FF/CUE
DATA 5 (PIN 88)	CH UP	-------
DATA 6 (PIN 87)	CH DOWN	REC /TIME
DATA 7 (PIN 86)	STOP/ EJECT	PLAY

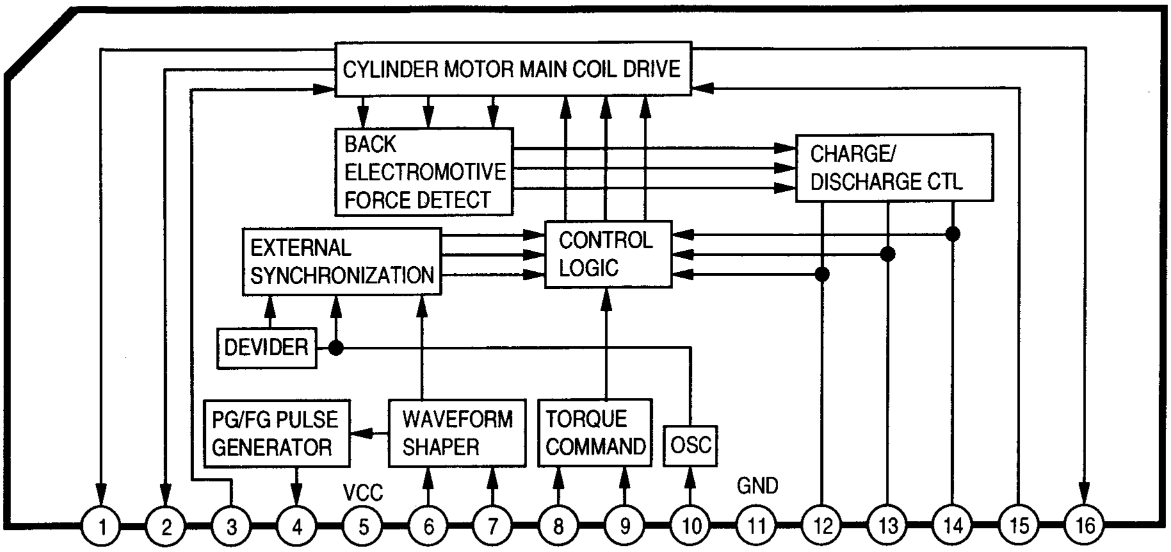
*1 I/O MATRIX CHART

J6307	WITH 2HEAD
J6308	WITH VCR PLUS
J6311	WITH Hi-Fi
J6312	WITH REC EQUALIZER
J6315	WITH AMORPHOUS HEAD
J6316	WITH PB EQUALIZER

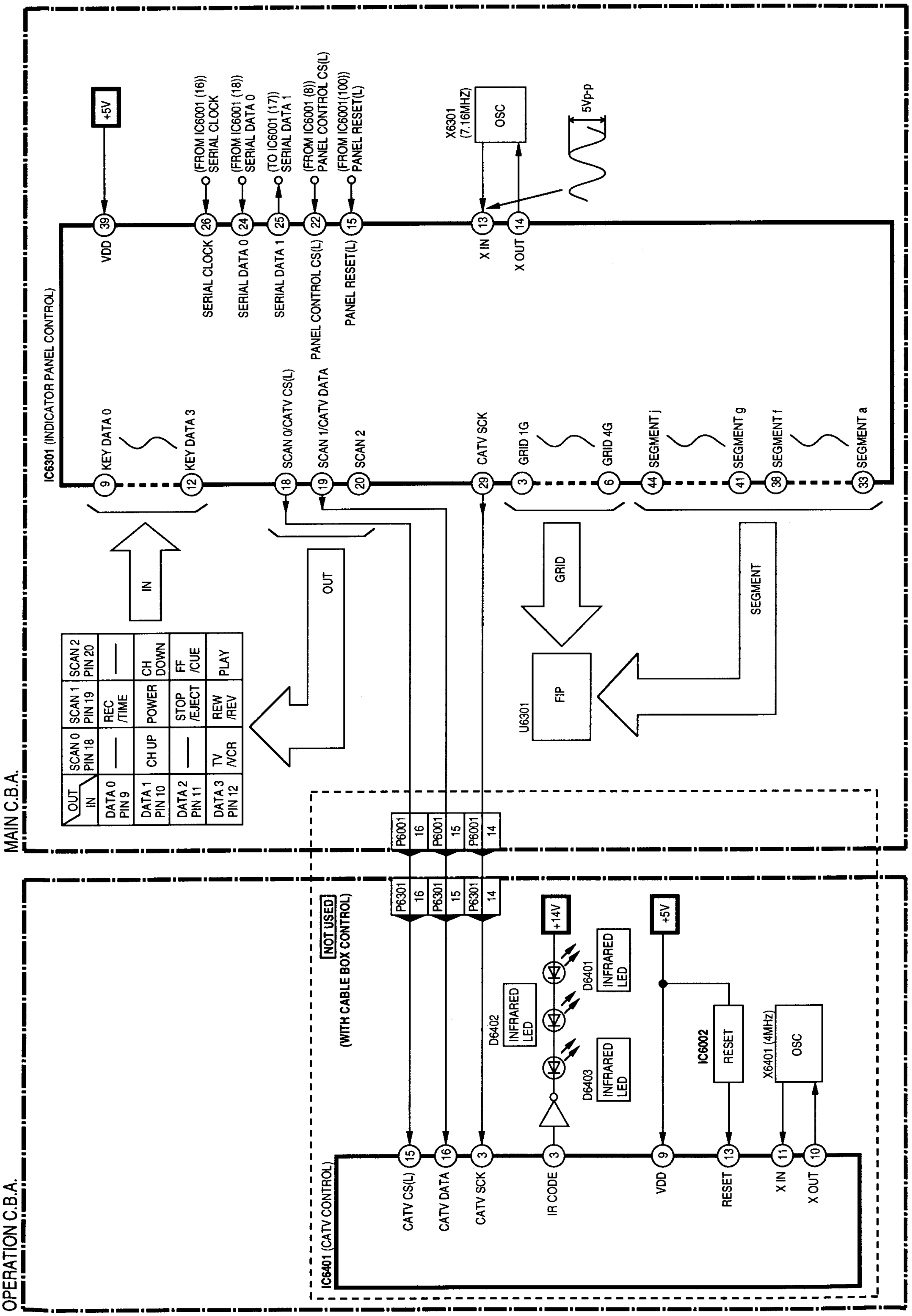
SERVO BLOCK DIAGRAM


MAIN C.B.A.
IC6001 (8BIT MICROPROCESSOR)
TP6003
(FROM IC3001(40)) ENVELOPE VOLTAGE
(TO IC3001(13)) V-LOCK PULSE
TP6205
(TO IC3501(1)) HEAD SW PULSE
(FROM IC3001(14)) V-SYNC
(WITH 4 HEAD)
(TO IC3001(49)) ROTARY SW
(TO IC3501(32)) HEAD AMP SW
(FROM IC3501(33)) ENVELOPE DET
85
22
21
76
97
98
99
ENVELOPE DETECTOR
V-LOCK PULSE GENERATOR
HEAD AMP CONTROL
ROTARY SIGNAL GENERATOR
HEAD AMP SELECT SIGNAL GENERATOR
REC CTL /TR MM GENERATOR
REC CTL AMP
SLOW /STILL CONTROL
SELECT
SELECT
PG
NEGATIVE PB CTL SLICER
POSITIVE PB CTL SLICER
COUNT DOWN
CYLINDER/CAPSTAN PHASE COMPENSATOR
CAPSTAN SPEED COMPENSATOR
CYLINDER SPEED COMPENSATOR
HEAD SW SIGNAL GENERATOR
PG/FG SEPARATOR
FORCED ACCELERATION
H-ROLL ACCELERATION
CAP TORQUE LIMIT
PB-ON
+5V
2.5V
SCHMIT
AMP
PWM
PWM
PWM
PWM
CAP REV(H)/STOP(M)/FWD(L)
70
71
73
67
68
75
42
62
63
64
58
59
60
61
24
23
25
26
66
57
41
40
43
INTEGRATION
INTEGRATION
INTEGRATION
INTEGRATION
R6201
+5V
PG SHIFTER
(WITH 4 HEAD)
TP6207
V-REF
TP6203
TP6209
1/2VCC
P6002 8
P6002 7
P6201 10
P6201 9
P6201 12
P6201 13
P3001 1
P3001 3
LOADING MOTOR P.C.B.
P2552 8
P2552 7
P2551 5
P2551 6
JUNCTION C.B.A.
P2531 10
P2531 9
P2531 12
P2531 13
P2532 4
P2532 2
P2532 21
P2532 20
P2532 1
P2532 3
P2532 10
P2532 11
P2532 8
P2532 7
CAPSTAN STATOR UNIT
P2502 4
P2502 2
P2502 21
P2502 20
P2502 1
P2502 3
P2502 10
P2502 11
P2502 8
P2502 7
25
24
22
10
7
12
CAPSTAN MOTOR DRIVE
DIFFER-ENTIAL AMP
POSITION SIGNAL PROCESS
IC2501 (CAPSTAN MOTOR DRIVE)
4
3
6
5
2
1
Q2501 HALL TRANSIS-TOR
Q2502 HALL TRANSIS-TOR
Q2503 HALL TRANSIS-TOR
CAPSTAN COIL
V-REF
FG HEAD
AUDIO CONTROL HEAD UNIT
P1541 5
P1541 6
CONTROL HEAD
HEAD AMP C.B.A.
P3501 1
P3501 3
4
9
PG/FG PULSE GENERATOR
CYLINDER MOTOR DRIVE
IC2601 (CYLINDER MOTOR DRIVE)
7
6
1
2
16
P3502 4
P3502 6
P3502 3
P3502 2
P3502 1
HALL IC
CYLINDER MOTOR

IC2601 CYLINDER MOTOR DRIVE IC-BLOCK DIAGRAM, AN3809K


CYLINDER MOTOR MAIN COIL DRIVE
BACK ELECTROMOTIVE FORCE DETECT
CHARGE/ DISCHARGE CTL
EXTERNAL SYNCHRONIZATION
CONTROL LOGIC
DEVIDER
PG/FG PULSE GENERATOR
WAVEFORM SHAPER
TORQUE COMMAND
OSC
VCC
GND
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16

OPERATION BLOCK DIAGRAM

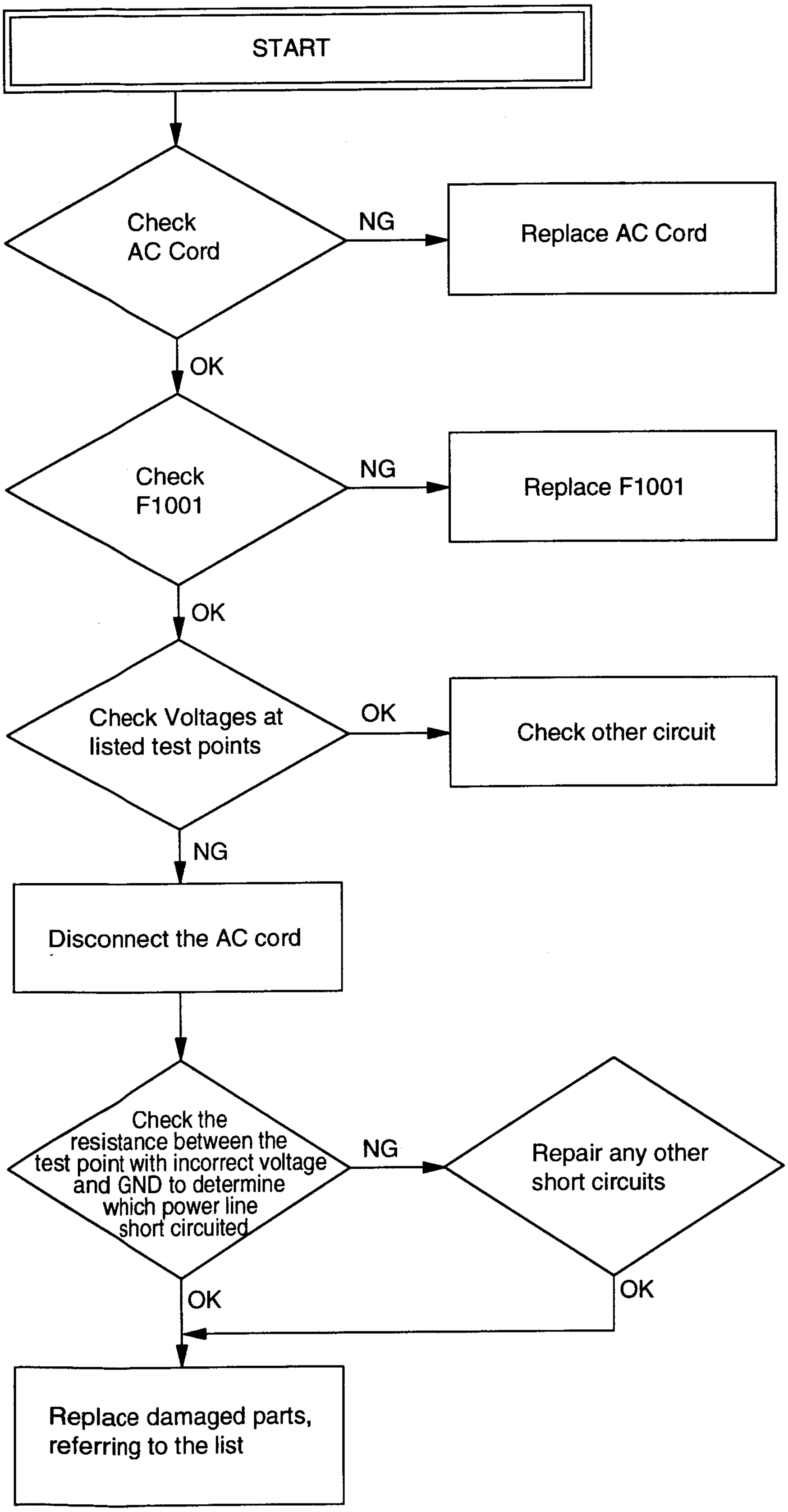


OUT / IN	SCAN 0 PIN 18	SCAN 1 PIN 19	SCAN 2 PIN 20
DATA 0 PIN 9	—	REC /TIME	—
DATA 1 PIN 10	CH UP	POWER	CH DOWN
DATA 2 PIN 11	—	STOP /EJECT	FF /CUE
DATA 3 PIN 12	TV /VCR	REW /REV	PLAY

MAIN C.B.A.
IC6301 (INDICATOR PANEL CONTROL)
+5V
VDD 39
SERIAL CLOCK 26 (FROM IC6001 (16)) SERIAL CLOCK
SERIAL DATA 0 24 (FROM IC6001 (18)) SERIAL DATA 0
SERIAL DATA 1 25 (TO IC6001 (17)) SERIAL DATA 1
PANEL CONTROL CS(L) 22 (FROM IC6001 (8)) PANEL CONTROL CS(L)
PANEL RESET(L) 15 (FROM IC6001(100)) PANEL RESET(L)
X IN 13
X OUT 14
X6301 (7.16MHZ)
OSC
5Vp-p
KEY DATA 0 9
KEY DATA 3 12
SCAN 0/CATV CS(L) 18
SCAN 1/CATV DATA 19
SCAN 2 20
CATV SCK 29
GRID 1G 3
GRID 4G 6
SEGMENT j 44
SEGMENT g 41
SEGMENT f 38
SEGMENT a 33
IN
OUT
GRID
SEGMENT
U6301
FIP
P6001 16
P6001 15
P6001 14
P6301 16
P6301 15
P6301 14
OPERATION C.B.A.
NOT USED
(WITH CABLE BOX CONTROL)
+14V
D6401 INFRARED LED
D6402 INFRARED LED
D6403 INFRARED LED
+5V
IC6002 RESET
X6401 (4MHz) OSC
IC6401 (CATV CONTROL)
CATV CS(L) 15
CATV DATA 16
CATV SCK 3
IR CODE 3
VDD 9
RESET 13
X IN 11
X OUT 10

TROUBLESHOOTING HINTS

Power Supply Section


START
Check AC Cord
NG
Replace AC Cord
OK
Check F1001
NG
Replace F1001
OK
Check Voltages at listed test points
OK
Check other circuit
NG
Disconnect the AC cord
Check the resistance between the test point with incorrect voltage and GND to determine which power line short circuited
NG
Repair any other short circuits
OK
OK
Replace damaged parts, referring to the list

Voltage and Resistance of Power Line

Test Points (Main C.B.A.)	Voltage	Resistance
TP1002 (DC+37V)	36.5V	More than 500 ohm
TP1003 (DC+14V)	13.5V	More than 30 ohm
TP1004 (DC-30V)	-30.7V	More than 500 ohm
TP1005 (DC+5V)	5.2V	More than 25 ohm
TP1006 (F +)	-25.0V	More than 1k ohm
TP1007 (F -)	-20.0V	More than 1k ohm
TP1008 (Power Down (L))	5.2V	More than 500 ohm
TP1058 (DC+12V)	12.0V	More than 30 ohm

VOLTAGE: STOP mode under normal conditions.
RESISTANCE: Between Test points and GND with power off under normal conditions.
Note: The Voltages and Resistance listed are approximate.

When power line is short circuited, check the following parts. Replace if necessary.

(1). SHORT CIRCUIT AND REPLACEMENT PARTS ON POWER LINE.

	CONDITION OF SHORT CIRCUIT	DAMAGEABLE PARTS BY SHORT CIRCUIT
(1)	5V ➡ GND	*PR1001, *D1008, Q1005
(2)	37V ➡ GND	*D1005, *R1010
(3)	14V ➡ GND 12V ➡ GND	D1006, *D1015, Q1051, *Q1052 D1051, D1052, D1053, *PR1002
(4)	-30V ➡ GND	*R1011, *D1007, *R1024
(5)	37V ➡ 14V	D1006, *D1015, Q1051, *Q1052 D1051, D1052, D1053, *PR1002
(6)	-30V ➡ 5V	REPLACE THE ALL OF PARTS OF (1) AND (4)
(7)	14V ➡ 12V	*Q1051, *Q1052, D1051, D1052, D1053, *PR1002
(8)	37V ➡ POWER DOWN(L)	*Q1005, D1005, R1010

*NOTE1: When a short circuit occurs supplying the Power for a long time will cause the fuse to blow.
*NOTE2: Parts with * mark are the most susceptible to damage in case of short circuit. Please check them first.

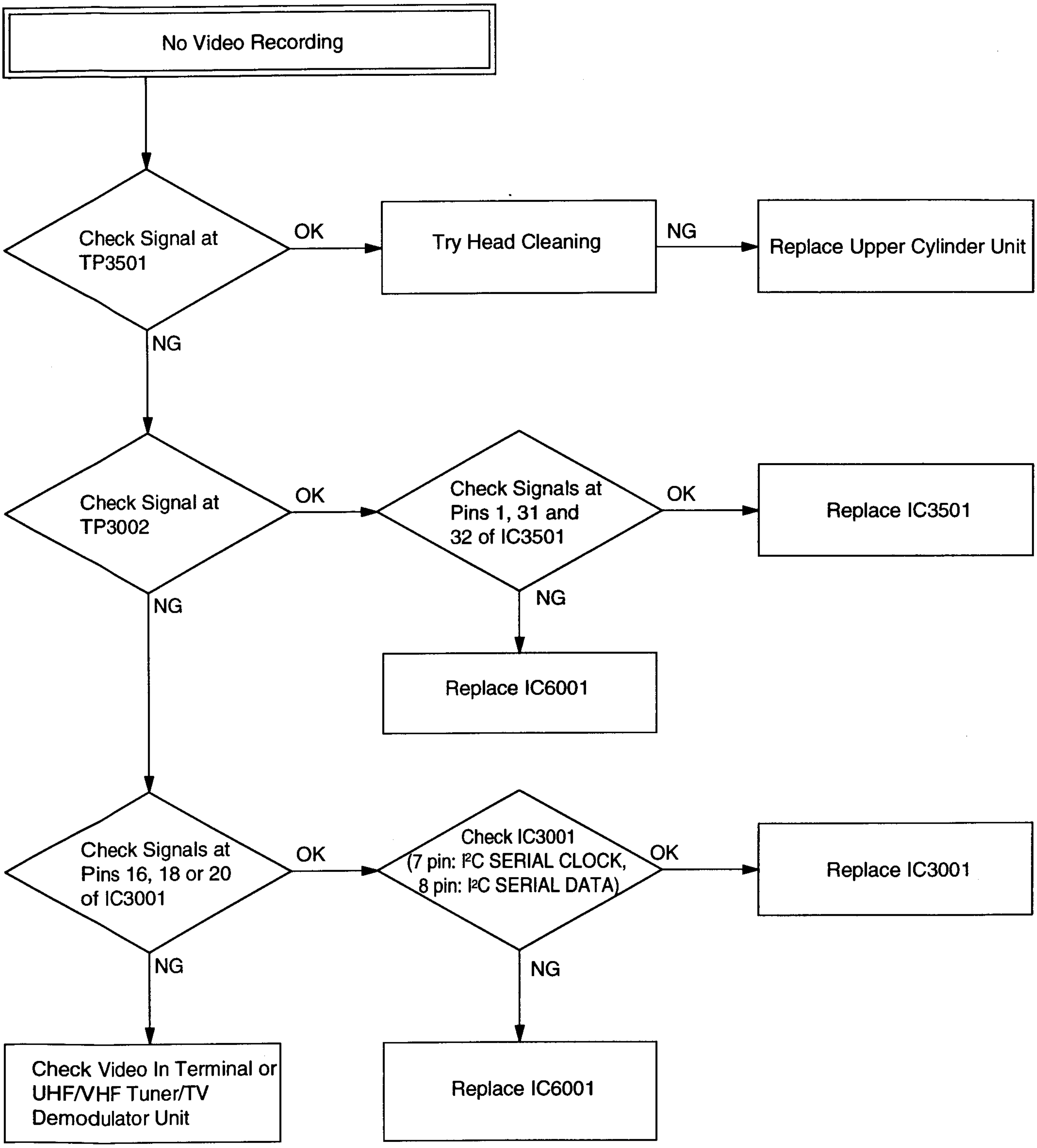
(2). IN CASE OF FUSE(F1001) BLOW.

Replace Parts F1001, Q1001, Q1002, D1001(very rarely has problems), C1016, C1028, D1015.
Cause ➡ It may be caused by a short circuit of 5V or 14V.

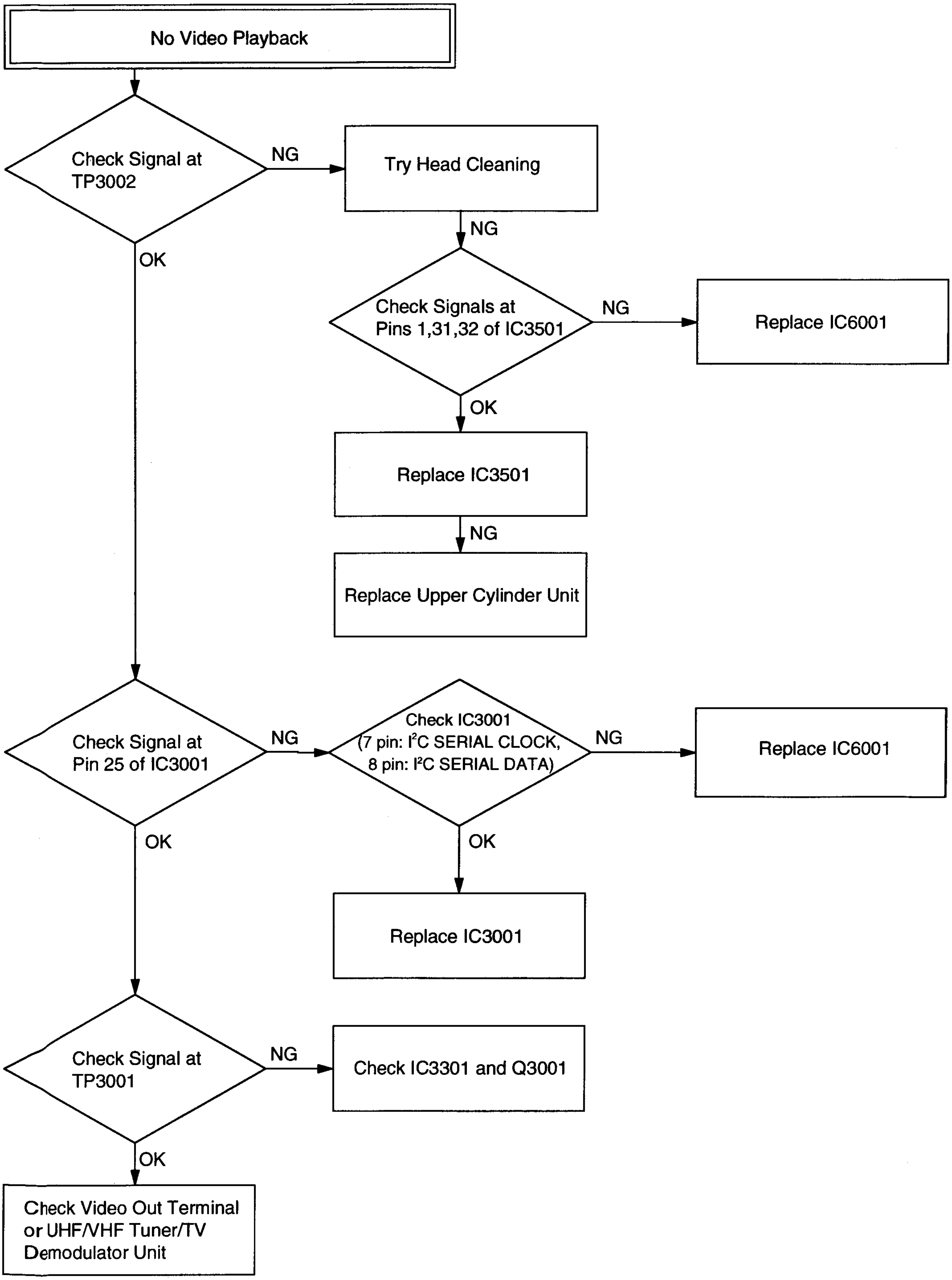
(3). JUST AFTER TURNING POWER ON, ABNORMAL NOISE CAN BE HEARD FROM POWER SUPPLY CIRCUIT.

Replace Parts D1015, D1008, D1007, R1011, C1016.
Cause ➡ It may be caused by a short circuit of 5V, -30V, 14V.
In this condition, supplying the Power for a long time will causes the fuse to blow.

Video Section


No Video Recording
Check Signal at TP3501
OK
Try Head Cleaning
NG
Replace Upper Cylinder Unit
NG
Check Signal at TP3002
OK
Check Signals at Pins 1, 31 and 32 of IC3501
OK
Replace IC3501
NG
Replace IC6001
NG
Check Signals at Pins 16, 18 or 20 of IC3001
OK
Check IC3001 (7 pin: I²C SERIAL CLOCK, 8 pin: I²C SERIAL DATA)
OK
Replace IC3001
NG
Check Video In Terminal or UHF/VHF Tuner/TV Demodulator Unit
NG
Replace IC6001

Video Section


No Video Playback
Check Signal at TP3002
NG
Try Head Cleaning
NG
OK
Check Signals at Pins 1,31,32 of IC3501
NG
Replace IC6001
OK
Replace IC3501
NG
Replace Upper Cylinder Unit
Check Signal at Pin 25 of IC3001
NG
Check IC3001 (7 pin: I²C SERIAL CLOCK, 8 pin: I²C SERIAL DATA)
NG
Replace IC6001
OK
OK
Replace IC3001
Check Signal at TP3001
NG
Check IC3301 and Q3001
OK
Check Video Out Terminal or UHF/VHF Tuner/TV Demodulator Unit

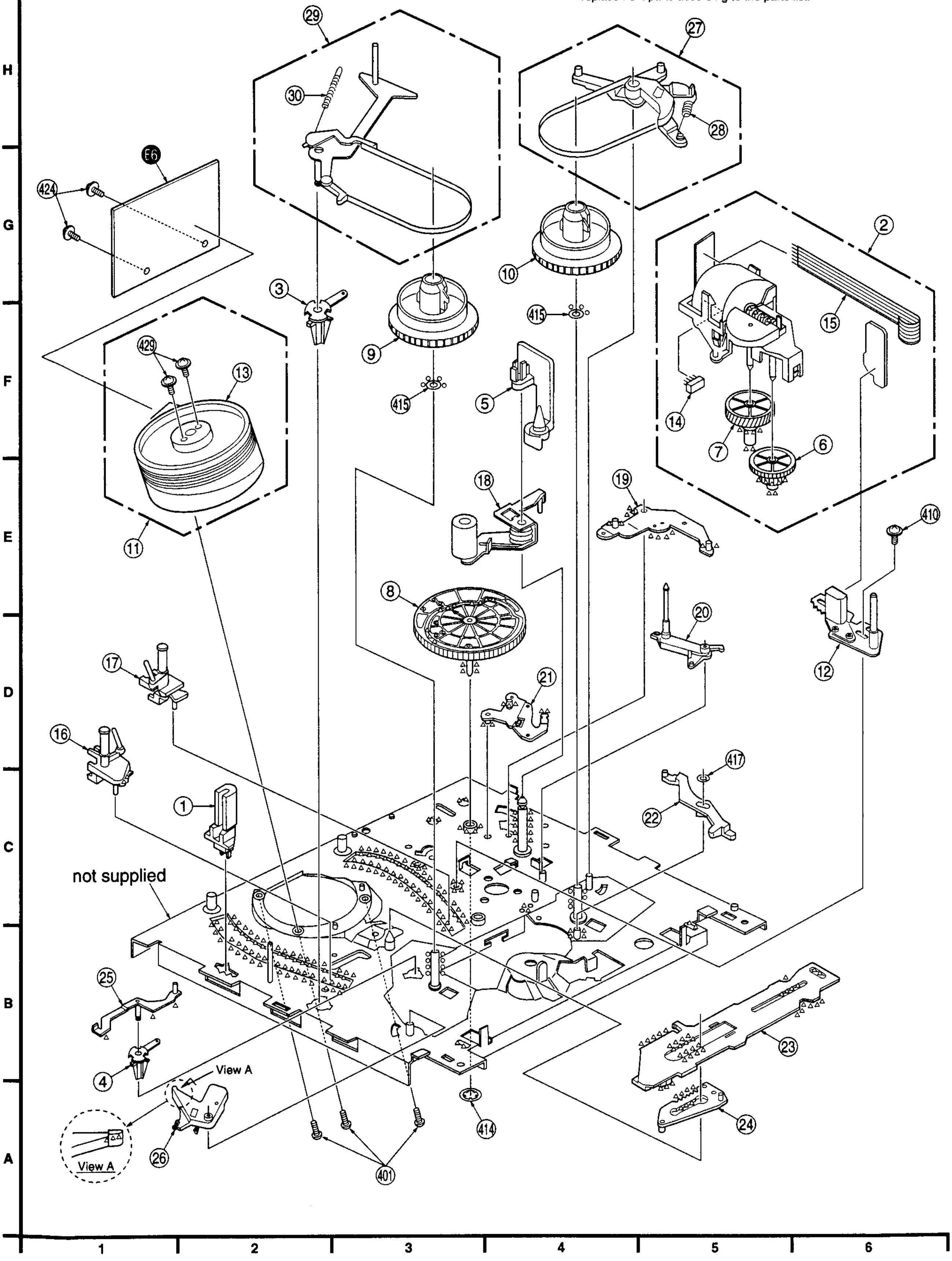
EXPLODED VIEWS

❶ MECHANISM (TOP) SECTION

LUBRICATION POINTS
When the marked parts are replaced, apply the recommended lubricants or adhesive for better maintenance of the unit.

Mark	Kind of Lubricant	Availability	Part Number
XXX	Silicon Grease	Available from Factory	VFK1301
OOO	Spindle Oil	Purchase from Local Supplier	--------
ΔΔΔ	Grease	Available from Factory	VFKS0081

Note: Parts with no Ref. No. in "EXPLODED VIEW" are not supplied.
And some Ref. No. will be skipped. Be sure to make your orders of replacement parts according to the parts list.

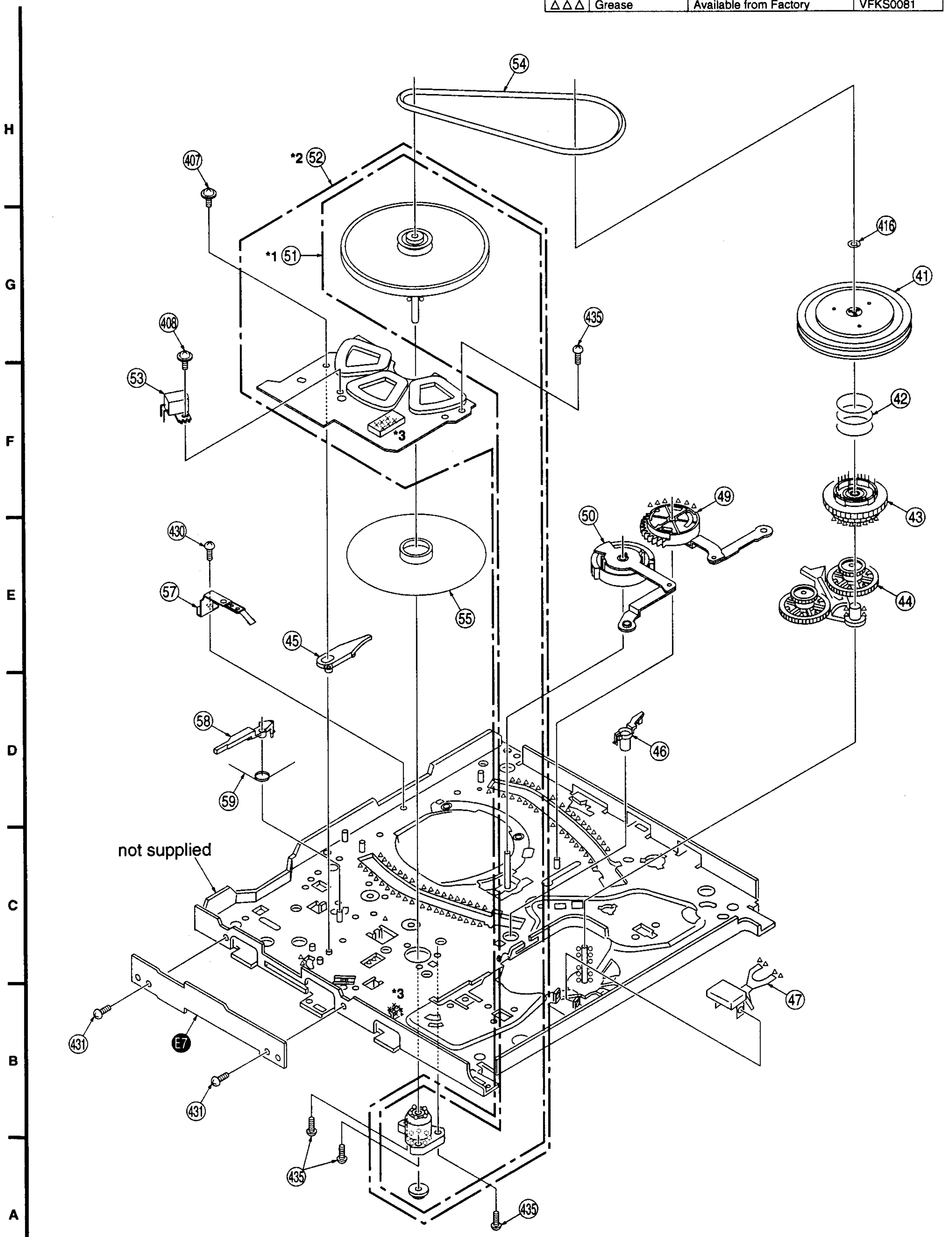


H
G
F
E
D
C
B
A
1
2
3
4
5
6
29
30
27
28
E6
424
3
10
9
415
2
15
429
13
5
14
7
6
11
18
19
410
8
20
12
17
21
16
417
1
22
not supplied
25
23
4
View A
24
View A
26
401
414

❷ MECHANISM (BOTTOM) SECTION

LUBRICATION POINTS
When the marked parts are replaced, apply the recommended lubricants or adhesive for better maintenance of the unit.

Mark	Kind of Lubricant	Availability	Part Number
×××	Silicon Grease	Available from Factory	VFK1301
○○○	Spindle Oil	Purchase from Local Supplier	--------
△△△	Grease	Available from Factory	VFKS0081

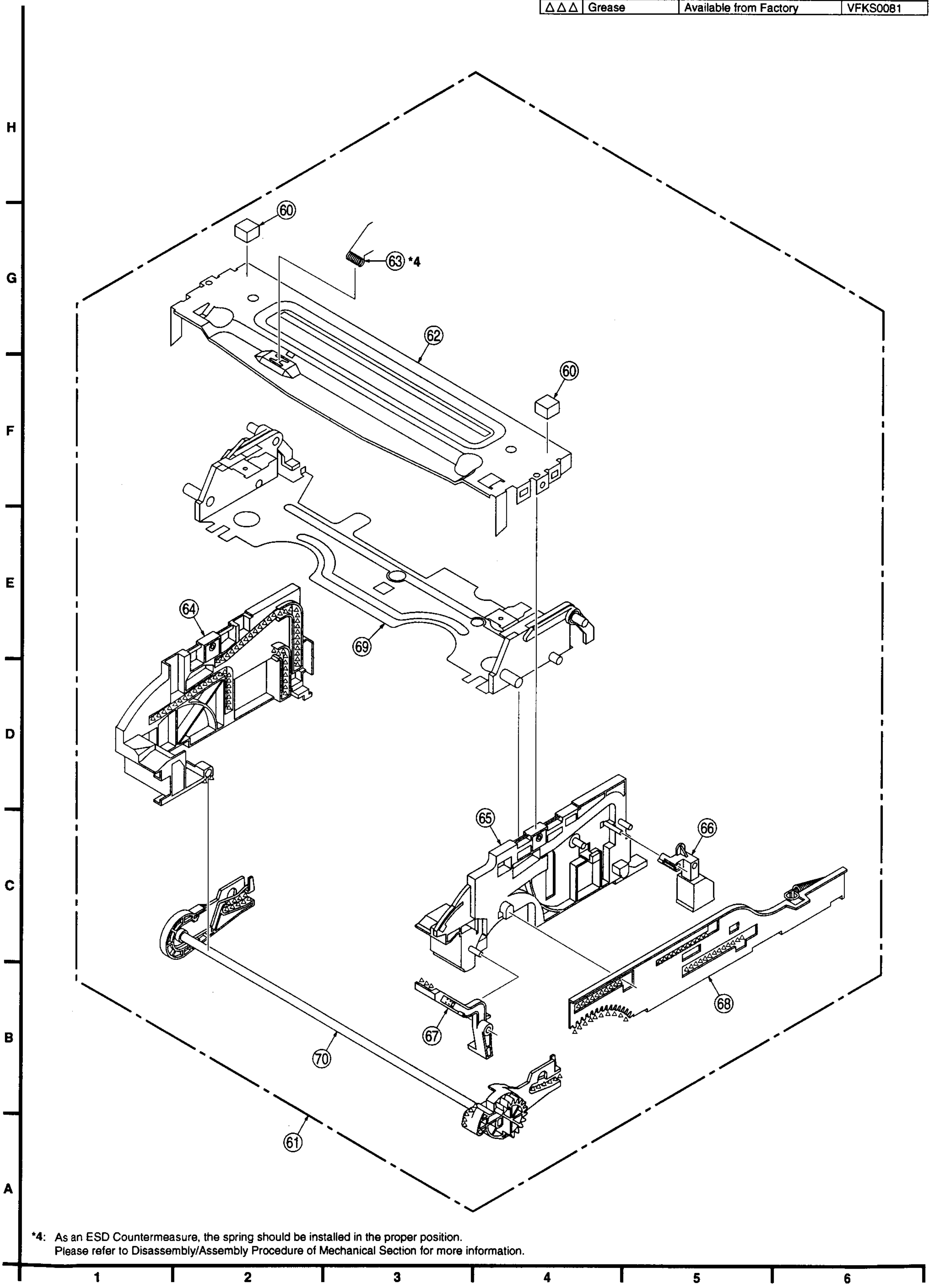

H
G
F
E
D
C
B
A
(54)
*2 (52)
(407)
*1 (51)
(416)
(41)
(408)
(53)
(435)
(42)
*3
(49)
(50)
(43)
(430)
(44)
(57)
(55)
(45)
(58)
(46)
(59)
not supplied
*3
(47)
(431)
E7
(431)
(435)
(435)
1
2
3
4
5
6

*1: Capstan Rotor Unit, Capstan Holder Unit, and Stopper are supplied as a Capstan Rotor Kit only.
*2: Capstan Stator Unit, Capstan Rotor Unit, Capstan Holder Unit, and Stopper are supplied as a Capstan Stator Kit only.
*3: Refer to "Capstan Stator Unit" of "Disassembly/Assembly Procedures of Mechanism" section for more information.

❸ CASSETTE UP COMPARTMENT SECTION

LUBRICATION POINTS
When the marked parts are replaced, apply the recommended lubricants or adhesive for better maintenance of the unit.

Mark	Kind of Lubricant	Availability	Part Number
×××	Silicon Grease	Available from Factory	VFK1301
○○○	Spindle Oil	Purchase from Local Supplier	--------
△△△	Grease	Available from Factory	VFKS0081



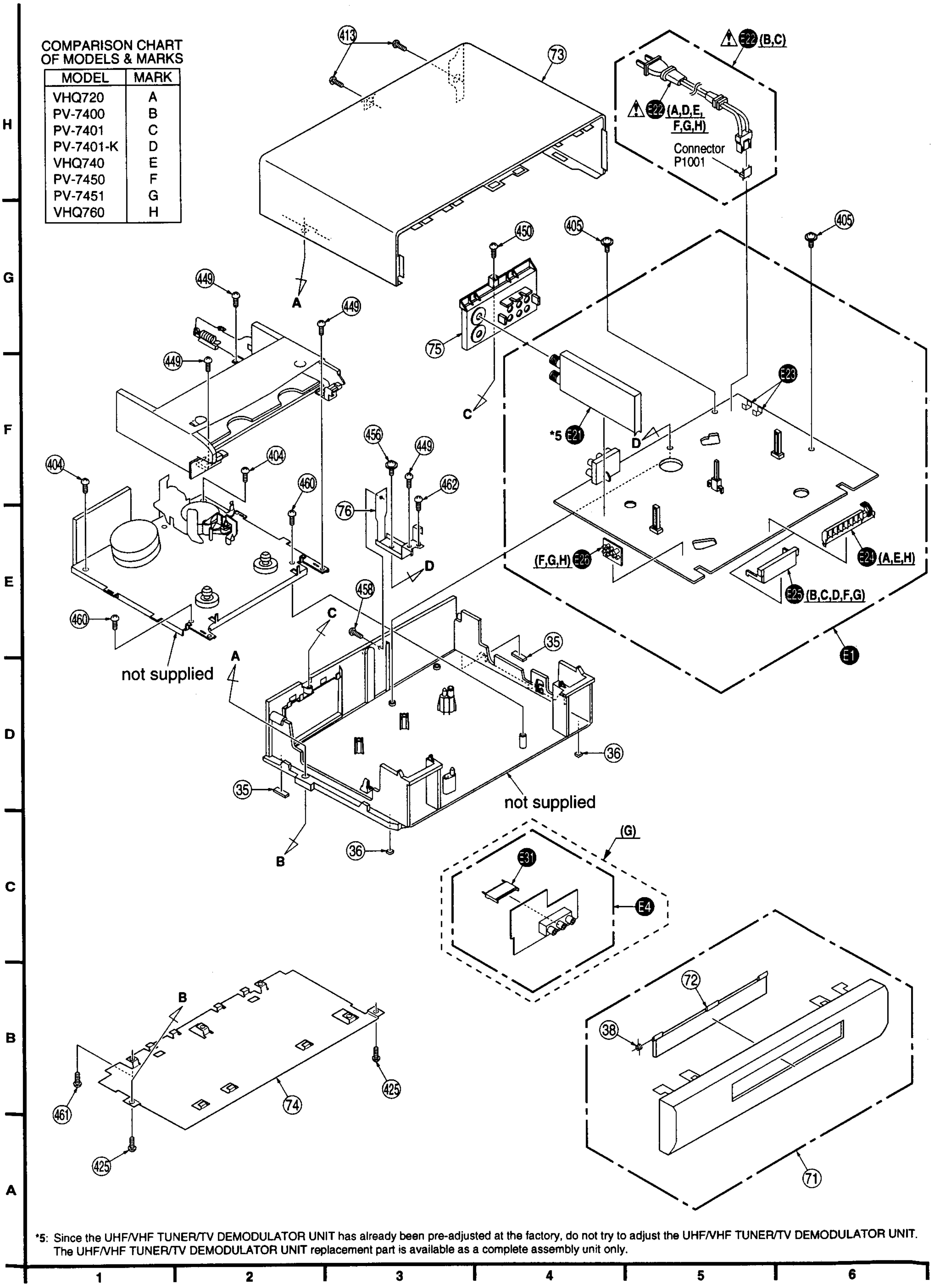
*4: As an ESD Countermeasure, the spring should be installed in the proper position.
Please refer to Disassembly/Assembly Procedure of Mechanical Section for more information.

❹ CHASSIS FRAME AND CASING PARTS SECTION

IMPORTANT SAFETY NOTICE
COMPONENTS IDENTIFIED BY THE SIGN ⚠ HAVE SPECIAL CHARACTERISTICS IMPORTANT FOR SAFETY. WHEN REPLACING ANY OF THESE COMPONENTS, USE ONLY THE SPECIFIED PARTS.

COMPARISON CHART OF MODELS & MARKS

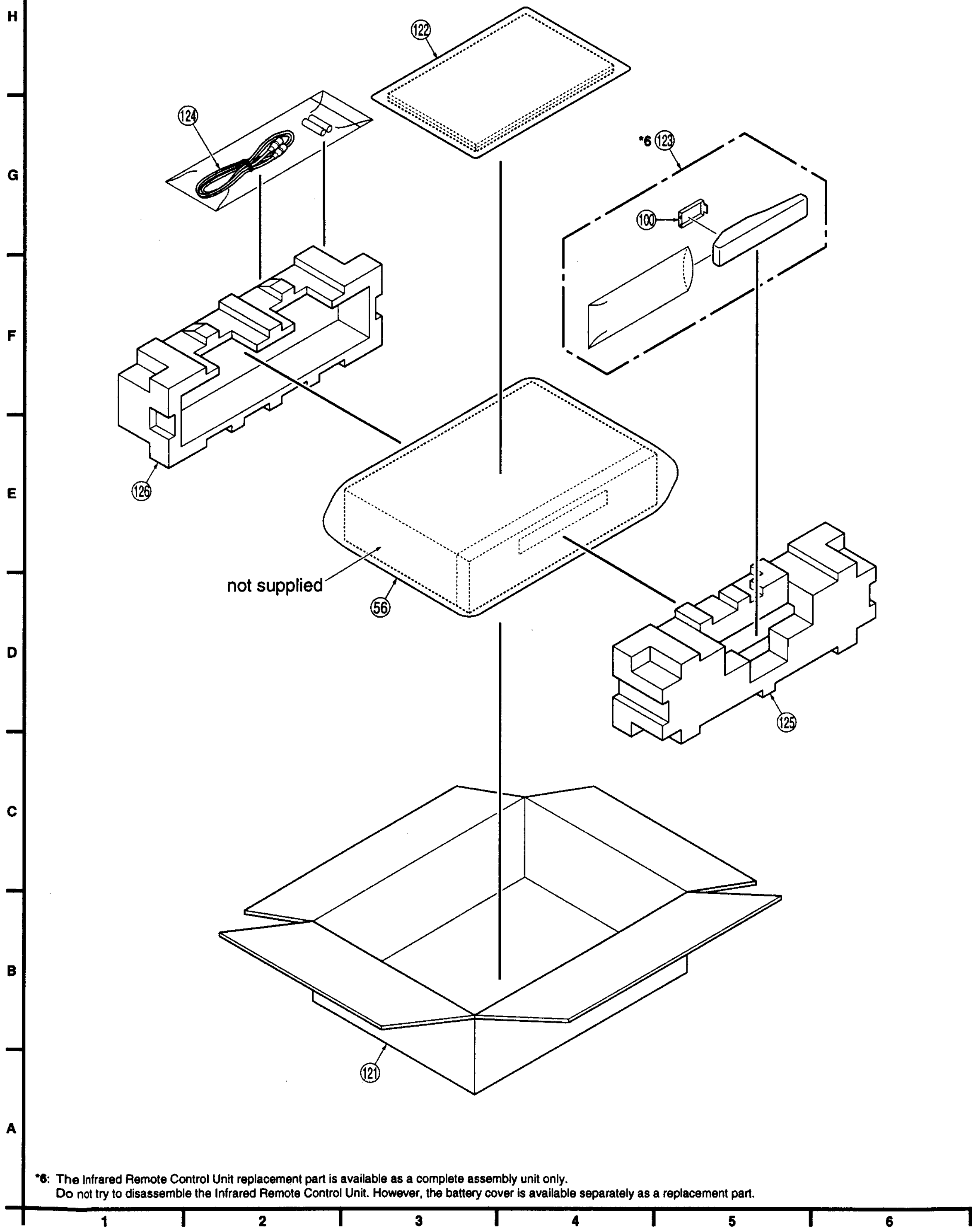
MODEL	MARK
VHQ720	A
PV-7400	B
PV-7401	C
PV-7401-K	D
VHQ740	E
PV-7450	F
PV-7451	G
VHQ760	H



413
73
⚠ E22 (B,C)
⚠ E22 (A,D,E, F,G,H)
Connector P1001
405
405
450
449
449
449
75
A
C
E23
*5 E21
D
456
449
404
404
460
462
76
D
(F,G,H) E26
E24 (A,E,H)
E25 (B,C,D,F,G)
E1
458
C
35
460
not supplied
A
36
35
not supplied
B
36
(G)
E31
E4
72
38
71
B
461
74
425
425
H
G
F
E
D
C
B
A
1
2
3
4
5
6

*5: Since the UHF/VHF TUNER/TV DEMODULATOR UNIT has already been pre-adjusted at the factory, do not try to adjust the UHF/VHF TUNER/TV DEMODULATOR UNIT. The UHF/VHF TUNER/TV DEMODULATOR UNIT replacement part is available as a complete assembly unit only.

❺ PACKING PARTS AND ACCESSORIES SECTION


H
G
F
E
D
C
B
A
122
124
*6 123
100
126
not supplied
56
125
121
1
2
3
4
5
6

*6: The Infrared Remote Control Unit replacement part is available as a complete assembly unit only.
Do not try to disassemble the Infrared Remote Control Unit. However, the battery cover is available separately as a replacement part.

REPLACEMENT PARTS LISTS

BEFORE REPLACING PARTS, READ THE FOLLOWING:

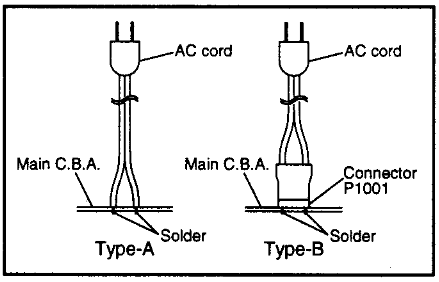
1. Use only original replacement parts:
   To maintain original function and reliability of repaired units, use only original replacement parts which are listed with their part numbers in the parts list.
2. **IMPORTANT SAFETY NOTICE**
   Components identified by the sign ⚠ have special characteristics important for safety. When replacing any of these components, use only the specified parts.
3. SPECIAL NOTE
   All integrated circuits and many other semiconductor devices are electrostatically sensitive and therefore require the special handling techniques described under the "ELECTROSTATICALLY SENSITIVE (ES) DEVICES" section of this service manual.
4. Parts with no Ref. No. in "EXPLODED VIEW" are not supplied. And some Ref. No. will be skipped. Be sure to make your orders of replacement parts according to the parts list.
5. Parts different in shape or size may be used. However, only interchangeable parts will be supplied as service replacement parts.
6. The parts which "AKEI" is indicated in Remarks column will be supplied from AKEI factory.

Mechanical Replacement Notes

1. Section No. of parts shown in Exploded Views are indicated in the Remarks column.
2. Capstan Rotor Unit, Capstan Holder Unit, and Stopper are supplied as Capstan Rotor Kit (Ref No. 51) only.
3. Capstan Stator Unit, Capstan Rotor Unit, Capstan Holder Unit, and Stopper are supplied as a Capstan Stator Kit (Ref No. 52) only. When installing Capstan Stator Unit, be sure to apply Silicon Grease (VFK1301). Refer to "Capstan Stator Unit" of "DISASSEMBLY/ ASSEMBLY PROCEDURES OF MECHANISM" section.
4. Since the UHF/VHF TUNER/TV DEMODULATOR UNIT (Ref No. E21) has already been pre-adjusted at the factory, do not try to adjust the UHF/VHF TUNER/TV DEMODULATOR UNIT. The UHF/VHF TUNER/TV DEMODULATOR UNIT replacement part is available as a complete assembly unit only.
5. The Infrared Remote Control Unit (Ref No. 123) replacement part is available as a complete assembly unit only. Do not try to disassemble the Infrared Remote Control Unit. However, the battery cover is available separately as a replacement part.
6. Cut Washers (Ref No. 416 and 417) are not reusable. If removed, install a new one.
7. Main Cam Push Nut (Ref No. 414) is not reusable. If removed, install a new one.

Electrical Replacement Notes

1. Item numbers with capital letter E (Example: E1, E2,...) in the Ref. No. column are shown in the exploded views. The E item numbers are also printed on the same page at the top of the column.
2. The parts with "■" mark are supplied individually or as a unit. The parts with "▲" mark are supplied individually or as a unit, and are included in "■" parts listed directly above in the parts list.
3. Unless otherwise specified;
   All resistors are in ohms, 1/4W, +/-5%, carbon, K = 1,000 ohm, M = 1,000 kohm.
   All capacitors are in microfarads, P = micromicrofarad, +/-10%.
   All coils are in microhenries, M = 1,000 microhenry, +/-10%.
4. Abbreviation
   RTL: Retention Time Limited
   This indicates that the retention time is limited for this item. After the discontinuation of this item in production, it will no longer be available.
   NR: Non Repairable Board Ass'y
   MGF CHIP: Metal Glaze Film Chip
   C CHIP: Ceramic Chip
   COMPLX CMP: Complex Component
   W FLMPRF: Wirewound Flameproof
   C.B.A.: Circuit Board Assembly
   P.C.B.: Printed Circuit Board
   E.S.D.: Electrostatically Sensitive Devices
5. SERVICE OF CHIP PARTS
   When servicing chip parts, please use a soldering iron of less than 30 watts. Refer to "IC, TRANSISTOR AND CHIP PART INFORMATION" page.
6. The parts with "●" are 0 ohm resistor. When replacing, a wire can be substituted for a 0 ohm resistor.
7. AC cord replacement note
   for models PV-7400 and PV-7401:
   Either Type-A or B is used as a AC cord for these models. However, for parts standardization and interchangeability, Type-B will be supplied with Connector P1001 as a kit (Part No.: VJAS0195-FS) for replacement. When replacing AC cord on products using Type-A, connect Connector P1001 to Main C.B.A. with solder and connect AC cord to Connector P1001.



8. IC6001 replacement note:

Model No.	products	replacement parts
PV-7400 PV-7401 PV-7401-K PV-7450 PV-7451	MN675048A5A3 MN675048A5A2 MN675048A5A1 MN675048A5A	MN675048A5A3
VHQ720 VHQ740 VHQ760	MN675048A5B2 MN675048A5B1 MN675048A5B	MN675048A5B2

9. Main C.B.A. replacement note:

Model No.	products	replacement parts
PV-7400	VEPS6023GH VEPS6023GF VEPS6023GK	VEPS6023GH
PV-7401	VEPS6023GJ VEPS6023GA VEPS6023GL	VEPS6023GJ
PV-7450	VEPS6023HH VEPS6023HF	VEPS6023HH
PV-7451	VEPS6023HJ VEPS6023HA	VEPS6023HJ

MECHANICAL REPLACEMENT PARTS LIST

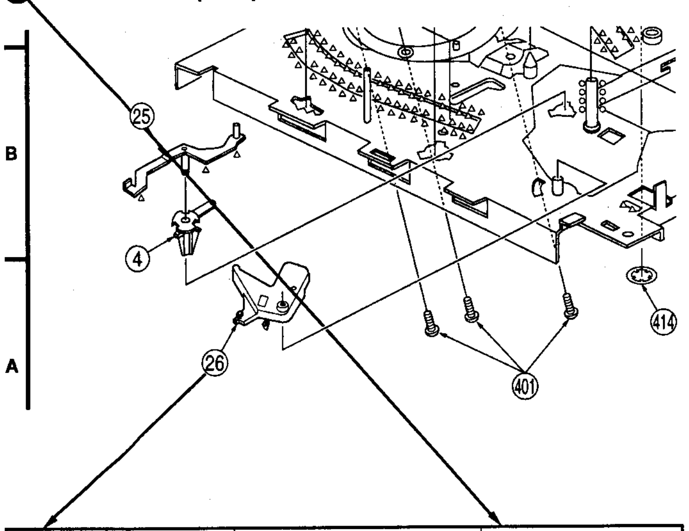
COMPARISON CHART OF MODELS & MARKS

MODEL	MARK	MODEL	MARK
VHQ720	A	VHQ740	E
PV-7400	B	PV-7450	F
PV-7401	C	PV-7451	G
PV-7401-K	D	VHQ760	H

<The complete Exploded Views are shown in this manual.>

EXPLODED VIEWS

❶ MECHANISM (TOP) SECTION



Ref. No.	Part No.	Part Name	Remarks
		MECHANISM PARTS ON CHASSIS	
			(Section No.)
1	VBSS0032	FULL ERASE HEAD	1
2	VXKS0851	MOTOR BLOCK ASS'Y	1
3	VDBS0349	TENSION ARM BOSS	1
4	VDBS0351	S BRAKE ARM BOSS	1
5	VMDS0971	OPENER PIECE	1
6	VDGS0428	WORM WHEEL GEAR	1
7	VDGS0429	INTERMEDIATE GEAR	1
8	VDGS0430	MAIN CAM GEAR	1
9	VDRS0054	S REEL TABLE	1
10	VDRS0055	T REEL TABLE	1
11		CYLINDER UNIT	
	VEGS0395	(A)	1
	VEGS0397	(B,C,D,E)	1
	VEGS0399	(F,G,H)	1
12	VEHS0558	AUDIO CONTROL HEAD UNIT	1
13		UPPER CYLINDER UNIT	
	VEHS0553	(A)	1
	VEHS0554	(B,C,D,E)	1
	VEHS0555	(F,G,H)	1
14	VJSS0882	CONNECTOR 8P	1
15	VJWS6JB100LL	COMMU CABLE W/OUT PLUG,12V	1
16	VXDS0198	LOADING POST BASE-S UNIT	1
17	VXDS0195	LOADING POST BASE-T UNIT	1
18	VXLS1058	PINCH ARM UNIT	1
19	VMLS0978	MAIN LEVER DRIVE ARM	1
20	VXLS1063	P5 ARM UNIT	1
21	VMLS0976	DRIVE RACK ARM	1
22	VMLS0972	CHANGING LEVER A	1
23	VMLS0977	MAIN LEVER	1
24	VXLS1072	LOADING RACK UNIT	1
25	VXLS1061	S BRAKE ARM UNIT	1
26	VMLS0982	S SPRING ARM	1
27	VXLS1062	T BRAKE UNIT	1
28	VMBS1150	T BRAKE SPRING	1
29	VXLS1074	TENSION ARM UNIT	1
30	VMBS1164	TENSION SPRING	1
35	VKAS0047	RUBBER FOOT	4
36	VKAS0060	RUBBER FOOT	4
38	VMBS1161	CASSETTE DOOR SPRING	4
41	VXPS0379	CENTER CLUTCH UNIT	2
42	VMBS1151	CHANGING GEAR SPRING	2
43	VDGS0425	CHANGING GEAR	2
44	VXLS1053	IDLER ARM UNIT	2
45	VMDS0985	PCB HOLDER	2
46	VMDS0982	MAIN LEVER GUIDE	2
47	VMLS0973	CHANGING LEVER B	2
49	VXLS1054	S LOADING ARM UNIT	2
50	VXLS1056	T LOADING ARM UNIT	2
51	VXPS0382K	CAPSTAN ROTOR KIT	2
52	VEMS0316K	CAPSTAN STATOR KIT	2
53	VBKS0040	FG HEAD	2
54	VDVS0087	CAPSTAN BELT SQUARE,ELASTOMER	2
		2MM	
55	VMAS2135	SUB ROTOR	2
56	VPFS0095	SHEET,POLYETHYLENE	5
57	VXBS0061	GROUNDING PLATE UNIT	2
58	VXLS1070	SS BRAKE ARM UNIT	2
59	VMBS1155	SS BRAKE SPRING	2
60	VMFS0311	CUSHION	3
61	VXYS1197	CASSETTE UP ASS'Y	3
62	VMAS2131	TOP PLATE	3
63	VMBS1159	GROUNDING SPRING	3
64	VMDS0976	SIDE PLATE L	3
65	VMDS0974	SIDE PLATE R	3
66	VMDS0979	SENSOR COVER	3
67	VMLS0987	OPENER LEVER	3
68	VXLS1064	DRIVE RACK UNIT	3
69	VXAS4404	HOLDER UNIT	3
70	VXLS1065	WIPER ARM UNIT	3
71		FRONT PANEL ASS'Y	
	VYPS6696	(A)	4
	VYPS6668	(B)	4
	VYPS6660	(C,D)	4
	VYPS6697	(E)	4
	VYPS6670	(F)	4
	VYPS6672	(G)	4
	VYPS6698	(H)	4
72		CASSETTE DOOR-LID	
	VGPS4140	(A)	4
	VGPS4141	(E)	4
	VGPS4098	(H)	4
		CASSETTE DOOR-LID UNIT	
	VYPS6666	(B,C,D)	4
	VYPS6667	(F)	4
	VYPS6675	(G)	4
73		TOP COVER	
	VKMS2393	(A,E,H)	4
	VKMS2356	(B,C,D,F)	4
	VKMS2392	(G)	4
74		BOTTOM PANEL	
	VKUS0271	(A,B,C,D,E)	4
	VKUS0270	(F,G,H)	4
75		REAR PANEL	
	VGPS4102	(A,B,C,D,E)	4
	VGPS4103	(F,G,H)	4
76	VMAS2136	CHASSIS ANGLE	4
100	VKFS2221	BATTERY COVER	5
121		PACKING CASE,PAPER	
	VPGS3799	(A)	5
	VPGS3788	(B)	5
	VPGS3786	(C)	5
	VPGS3815	(D)	5
	VPGS3800	(E)	5
	VPGS3789	(F)	5
	VPGS3787	(G)	5
	VPGS3801	(H)	5
122		FAN BAG	
	VQFS3336	(A)	5
	VQFS3327	(B,F)	5
	VQFS3329	(C)	5
	VQFS3334	(D)	5
	VQFS3335	(E,H)	5
	VQFS3366	(G)	5

Ref. No.	Part No.	Part Name	Remarks
123		INFRARED REMOTE CONTROL UNIT	
	VSQS1490	(A,E)	5
	VSQS1488	(B,C,D)	5
	VSQS1480	(F,G)	5
	VSQS1489	(H)	5
124	VJAS0183	VHF CONNECTING CABLE	5
125	VPNS0579	FRONT CUSHION,STYROFOAM	5
126	VPNS0580	REAR CUSHION,STYROFOAM	5
		SCREWS AND WASHERS	
401	VHDS0475	SCREW,STEEL	1
404	VHDS0472	SCREW,FE	4
405	VHDS0496	SCREW W/WASHER,FE	4
407	XYN26+C5	SCREW W/WASHER,STEEL	2
408	XYN2+J5FZ	SCREW W/WASHER,STEEL	2
410	VHDS0498	SCREW W/WASHER,STEEL	1
413	VHDS0293	SCREW,FE	4
414	VHNS0070	MAIN CAM PUSH NUT,STEEL	1
415	VMXS0925	REEL WASHER,PBT	1
416	VMXS0922	CUT WASHER,NYLON	2
417	VMXS0924	CUT WASHER,NYLON	1
424	XYC26+CF6J	SCREW W/WASHER,STEEL	1
425	XTB3+12A	TAPPING SCREW,FE	4
429	VHDS0491	SCREW W/WASHER,STEEL	1
430	XTV26+6FFZJ	TAPPING SCREW,STEEL	2
431	XTV26+6FJ	TAPPING SCREW,STEEL	2
435	XSN26+4	SCREW,STEEL	2
449	VHDS0493	TAPPING SCREW,FE	4
450	VHDS0309	SCREW,FE	4
456	VHDS0497	SCREW W/WASHER,FE	4
458	XTV26+8J	TAPPING SCREW,FE	4
460	XTN4+12A	TAPPING SCREW,FE	4
461	VHDS0460	SCREW,FE	4
462	XTN4+15AR	SCREW,FE	4
		SERVICE FIXTURES AND TOOLS	
	VMFS0003H6	VHS ALIGNMENT TAPE	
	VFKS0009	REEL TABLE HEIGHT FIXTURE	
	VFKS0010	POST ADJUSTMENT PLATE	
	VFKS0081	GREASE	
	VFK0329	POST ADJUSTMENT DRIVER	
	VFK1301	SILICON GREASE	
	VFK27	HEAD CLEANING STICK	
	VFK0330	H-POSITION ADJUSTMENT DRIVER	
	VUZS0002	EXTENSION CABLE KIT	
	VUVS0001	MODE SELECT SW ASS'Y	
	VUVS0002	EXTENSION CABLE -1	
	VUVS0003	EXTENSION CABLE -2	
		(FOR Hi-Fi MODEL)	
	VUVS0004	EXTENSION CABLE -2	
		(FOR 4 HEAD MODEL)	
	VUVS0005	EXTENSION CABLE -2	
		(FOR 2 HEAD MODEL)	

ELECTRICAL REPLACEMENT PARTS LIST

(E1, E4, E6, E7)

Ref. No.	Part No.	Part Name	Remarks
		PRINTED CIRCUIT BOARD ASSEMBLY	
E1	VEPS6026AC	MAIN C.B.A.	■ E.S.D. RTL
	(A)		
E1	VEPS6023GH	MAIN C.B.A.	■ E.S.D. RTL
	(B)		
E1	VEPS6023GJ	MAIN C.B.A.	■ E.S.D. RTL
	(C,D)		
E1	VEPS6026GB	MAIN C.B.A.	■ E.S.D. RTL
	(E)		
E1	VEPS6023HH	MAIN C.B.A.	■ E.S.D. RTL
	(F)		
E1	VEPS6023HJ	MAIN C.B.A.	■ E.S.D. RTL
	(G)		
E1	VEPS6026HB	MAIN C.B.A.	■ E.S.D. RTL
	(H)		
E4	VEPS8022A	OPERATION C.B.A.	■ E.S.D.
	(G)		
E6	VEPS5012A	HEAD AMP C.B.A.	■ E.S.D.
	(A)		
E6	VEPS5011A	HEAD AMP C.B.A.	■ E.S.D.
	(B,C,D,E)		
E6	VEPS5010A	Hi-Fi AUDIO/VIDEO HEAD AMP	■ E.S.D.
		C.B.A.	
	(F,G,H)		
E7	VEPS0A25A	JUNCTION C.B.A.	■ E.S.D.
		MAIN C.B.A.	■
		(A,E,H)	
		INTEGRATED CIRCUITS	
IC1001	PS2501-1-X	IC, LINEAR ERROR V. DET	⚠
	OR ON3131-R.KT	IC, LINEAR ERROR V. DET	⚠
	OR ON3131-S.KT	IC, LINEAR ERROR V. DET	⚠
IC3001	AN3475FBP	IC, LINEAR VIDEO/AUDIO PROCESS	
IC3101	MN3885S	IC, CCD 1H DELAY	E.S.D.
IC3301	LC74723M9629	IC, LOGIC CHARACTER GENERATOR	E.S.D.
IC4201	AN3962FB-V	IC, LINEAR Hi-Fi AUDIO PROCESS	
	(H)		
IC6001	MN675048A5B2	IC, 8BIT MICROPROCESSOR	E.S.D.
IC6002	CNA1801N	REEL SENSOR UNIT	
IC6003	CNA1801N	REEL SENSOR UNIT	
		TRANSISTORS	
Q1001	2SC4533LP.KT		⚠
	OR 2SC5130LF608		⚠
Q1002	2SD2259		
Q1003	2SD601A(R,S)	CHIP	
Q1004	2SB709A(Q,R)	CHIP	
Q1005	2SB709A(Q,R)	CHIP	
Q1051	2SD2159(T)		
	(A,E)		
	2SD2375(P,Q)		
	(H)		
Q1052	2SD601(R,S)	CHIP	
Q3001	2SB709(R,S)	CHIP	
Q4001	2SB709A(Q,R,S)	CHIP	
Q4002	2SD601A(R,S)	CHIP	
Q4003	2SD601A(R,S)	CHIP	
Q4101	2SD601(R,S)	CHIP	
Q4601	2SD601(R,S)	CHIP	
	(H)		
Q6002	2SB709(R,S)	CHIP	
Q6003	2SD601(R,S)	CHIP	
Q6005	2SB709(R,S)	CHIP	
Q6006	2SD601(R,S)	CHIP	
Q6008	2SD601(R,S)	CHIP	
Q6009	VEKS5522	PHOTO SENSOR UNIT	
Q6010	VEKS5522	PHOTO SENSOR UNIT	
Q6301	2SD601(R,S)	CHIP	
Q6302	2SD601(R,S)	CHIP	
Q6303	2SD601(R,S)	CHIP	

Ref. No.	Part No.	Part Name	Remarks
Q6304	2SD601(R,S)	CHIP	
	(H)		
Q6390	2SD601(R,S)	CHIP	
	(H)		
		DIODES	
D1001	S1WBA40		⚠
	OR S1WBA60		⚠
D1002	ERA18-04V3		
D1003	ERA18-04V3		
D1005	ERA18-04V3		
D1006	RU2YXLFC1		
	(A,E)		
	RU3YXLFC1		
	(H)		
D1007	MA188		
	(A,E)		
	ERA18-04V3		
	(H)		
D1008	ERB81-004V1		
D1011	MA4051NH	ZENER 5.1V	
D1012	MA858		
D1013	MA165		
D1015	MA7180A-TR	ZENER 18V	⚠
	OR MA7180B-TR	ZENER 18V	⚠
D1016	MA165		
D1051	MA4100N	ZENER 10V	
D1052	MA165		
D1053	MA165		
D3004	MA4091-M	ZENER 9.1V	
D4201	MA165		
	(H)		
D6001	VEKS5521	SENSOR LED UNIT	
D6002	MA165		
D6003	MA165		
D6007	MA165		
D6201	MA165		
D6202	MA165		
D6203	MA165		
D6204	MA165		
D6301	MA165		
D6302	MA165		
D6303	SLP936C81HAB	LED RED	
D6304	SLP936C81HAB	LED RED	
D6305	SLP336C81HAB	LED GREEN	
D6306	SLP336C81HAB	LED GREEN	
D6330	SLP336C81HAB	LED GREEN	
	(H)		
D6331	SLP936C81HAB	LED RED	
	(H)		
D6332	SLP336C81HAB	LED GREEN	
	(H)		
D7002	MA4300-TA	ZENER 30V	
		RESISTORS	
R1001	VRESC2TK275T	+-10% 1/2W 2.7M	⚠
R1003	VRESE2TJ334	1/2W 330K	
R1004	ERG2SJW333E	METAL OXIDE 2W 33K	
R1005	ERG1SJW560E	METAL OXIDE 1W 56	
R1006	ERJ6GEYJ222V	MGF CHIP 1/10W 2.2K	
R1007	ERDS2TJ101	100	
R1008	ERDS2TJ392	3.9K	
R1010	ERD25FYJ100T	10	⚠
R1011	ERD25FYJ100T	10	⚠
	(A,E)		
	ERD25FYJ4R7T	4.7	⚠
	(H)		
R1014	ERJ6GEYJ221V	MGF CHIP 1/10W 220	
R1015	ERJ6GEYJ221V	MGF CHIP 1/10W 220	
R1016	ERJ6GEYJ562V	MGF CHIP 1/10W 5.6K	
R1017	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R1018	ERJ6GEYJ183V	MGF CHIP 1/10W 18K	
R1019	ERJ6GEYJ392V	MGF CHIP 1/10W 3.9K	
R1020	ERJ6GEYJ682V	MGF CHIP 1/10W 6.8K	
R1022	ERJ6GEYJ221V	MGF CHIP 1/10W 220	
R1051	ERJ6GEYJ472V	MGF CHIP 1/10W 4.7K	

Ref. No.	Part No.	Part Name	Remarks
R1052	ERDS2TJ123	12K	
	(A,E)		
	ERDS2TJ153	15K	
	(H)		
R1053	ERDS2TJ153	15K	
	(H)		
R3002	ERJ6GEYJ331V	MGF CHIP 1/10W 330	
R3003	ERJ6GEYJ561V	MGF CHIP 1/10W 560	
R3004	ERJ6GEYJ750V	MGF CHIP 1/10W 75	
R3005	ERDS2TJ101	100	
R3021	ERJ6GEYJ332V	MGF CHIP 1/10W 3.3K	
R3022	ERJ6GEYJ152V	MGF CHIP 1/10W 1.5K	
R3023	ERJ6GEYJ121V	MGF CHIP 1/10W 120	
R3027	ERJ6GEYJ821V	MGF CHIP 1/10W 820	
R3029	ERJ6GEYJ125V	MGF CHIP 1/10W 1.2M	
R3030	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R3031	ERJ6GEYJ474V	MGF CHIP 1/10W 470K	
R3033	ERJ6GEYJ222V	MGF CHIP 1/10W 2.2K	
R3034	ERJ6GEYJ121V	MGF CHIP 1/10W 120	
R3035	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R3036	ERJ6GEYJ122V	MGF CHIP 1/10W 1.2K	
R3041	ERJ6GEYJ750V	MGF CHIP 1/10W 75	
R3301	ERJ6GEYJ222V	MGF CHIP 1/10W 2.2K	
R3302	ERJ6GEYJ222V	MGF CHIP 1/10W 2.2K	
R3303	ERJ6GEYJ473V	MGF CHIP 1/10W 47K	
R4001	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R4002	ERJ6GEYJ334V	MGF CHIP 1/10W 330K	
R4003	ERJ6GEYJ221V	MGF CHIP 1/10W 220	
R4004	ERJ6GEYJ333V	MGF CHIP 1/10W 33K	
R4005	ERJ6GEYJ225V	MGF CHIP 1/10W 2.2M	
R4006	ERJ6GEYJ681V	MGF CHIP 1/10W 680	
R4007	ERJ6GEYJ821V	MGF CHIP 1/10W 820	
R4008	ERJ6GEYG223V	MGF CHIP +-2% 1/10W 22K	
R4009	ERJ6GEYJ473V	MGF CHIP 1/10W 47K	
	(A,E)		
R4010	ERJ6GEYJ473V	MGF CHIP 1/10W 47K	
	(A,E)		
	ERJ6GEYJ123V	MGF CHIP 1/10W 12K	
	(H)		
R4011	ERJ6GEYJ562V	MGF CHIP 1/10W 5.6K	
	(A,E)		
	ERJ6GEYJ682V	MGF CHIP 1/10W 6.8K	
	(H)		
R4012	ERJ6GEYJ682V	MGF CHIP 1/10W 6.8K	
R4013	ERJ6GEY0R00V	MGF CHIP 1/10W 0	●
	(A,E)		
R4014	ERJ6GEYJ472V	MGF CHIP 1/10W 4.7K	
R4015	ERJ6GEYJ222V	MGF CHIP 1/10W 2.2K	
R4017	ERJ6GEYJ561V	MGF CHIP 1/10W 560	
R4018	ERJ6GEYJ562V	MGF CHIP 1/10W 5.6K	
	(A,E)		
R4019	VCYSARH102KB	CERAMIC 50V 1000P	
R4028	ERJ6GEYJ222V	MGF CHIP 1/10W 2.2K	
R4101	ERJ6GEYJ224V	MGF CHIP 1/10W 220K	
R4102	ERJ6GEYG333V	MGF CHIP +-2% 1/10W 33K	
R4103	ERJ6GEYJ153V	MGF CHIP 1/10W 15K	
R4201	ERJ6GEYJ472V	MGF CHIP 1/10W 4.7K	
	(H)		
R4202	ERJ6GEYJ472V	MGF CHIP 1/10W 4.7K	
	(H)		
R4203	ERJ6GEYJ511V	MGF CHIP 1/10W 510	
	(H)		
R4204	ERJ6GEYJ511V	MGF CHIP 1/10W 510	
	(H)		
R4205	ERJ6GEYG333V	MGF CHIP +-2% 1/10W 33K	
	(H)		
R4206	ERJ6GEYG333V	MGF CHIP +-2% 1/10W 33K	
	(H)		
R4207	ERJ6GEYG153V	MGF CHIP +-2% 1/10W 15K	
	(H)		
R4208	ERJ6GEYG153V	MGF CHIP +-2% 1/10W 15K	
	(H)		
R4213	ERJ6GEYJ333V	MGF CHIP 1/10W 33K	
	(H)		
R4214	ERJ6GEYJ333V	MGF CHIP 1/10W 33K	
	(H)		
R4215	ERJ6GEYJ153V	MGF CHIP 1/10W 15K	
	(H)		

Ref. No.	Part No.	Part Name	Remarks
R4216	ERJ6GEYJ153V	MGF CHIP 1/10W 15K	
	(H)		
R4217	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
	(H)		
R4218	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
	(H)		
R4219	ERJ6GEYJ683V	MGF CHIP 1/10W 68K	
	(H)		
R4220	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
	(H)		
R4221	ERJ6GEYJ101V	MGF CHIP 1/10W 100	
	(H)		
R4222	ERJ6GEYJ101V	MGF CHIP 1/10W 100	
	(H)		
R4226	ERJ6GEY0R00V	MGF CHIP 1/10W 0	●
	(H)		
R4230	ERJ6GEY0R00V	MGF CHIP 1/10W 0	●
	(H)		
R4234	ERJ6GEY0R00V	MGF CHIP 1/10W 0	●
	(H)		
R4240	ERJ6GEY0R00V	MGF CHIP 1/10W 0	●
	(H)		
R4241	ERA6YEB153V	MGF CHIP +-0.1% 1/10W 15K	
	(H)		
R4243	ERDS2TJ152	1.5K	
	(H)		
R4244	ERJ6GEYJ152V	MGF CHIP 1/10W 1.5K	
	(H)		
R4245	ERJ6GEY0R00V	MGF CHIP 1/10W 0	●
	(H)		
R4246	ERJ6GEYJ333V	MGF CHIP 1/10W 33K	
	(H)		
R4247	ERJ6GEYJ123V	MGF CHIP 1/10W 12K	
	(H)		
R4248	ERJ6GEY0R00V	MGF CHIP 1/10W 0	●
	(H)		
R4249	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
	(H)		
R4601	ERJ6GEYJ123V	MGF CHIP 1/10W 12K	
	(H)		
R4602	ERJ6GEYJ472V	MGF CHIP 1/10W 4.7K	
	(A,E)		
	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
	(H)		
R4604	ERJ6GEYJ561V	MGF CHIP 1/10W 560	
	(H)		
R4605	ERJ6GEYJ562V	MGF CHIP 1/10W 5.6K	
	(H)		
R4606	ERJ6GEYJ682V	MGF CHIP 1/10W 6.8K	
	(H)		
R4607	ERJ6GEYJ101V	MGF CHIP 1/10W 100	
	(H)		
R4608	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
	(A,E)		
R4870	ERJ6GEYJ223V	MGF CHIP 22K	
R6001	ERDS2TJ561	560	
R6002	ERDS2TJ561	560	
R6004	ERJ6GEYJ333V	MGF CHIP 1/10W 33K	
	(H)		
R6005	ERJ6GEYJ223V	MGF CHIP 1/10W 22K	
	(H)		
R6006	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6012	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6013	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
	(H)		
R6014	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6015	ERJ6GEYJ562V	MGF CHIP 1/10W 5.6K	
R6019	ERJ6GEYJ223V	MGF CHIP 1/10W 22K	
R6020	ERJ6GEYJ223V	MGF CHIP 1/10W 22K	
R6021	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R6022	ERJ6GEYJ223V	MGF CHIP 1/10W 22K	
R6023	ERJ6GEYJ563V	MGF CHIP 1/10W 56K	
R6024	ERJ6GEYJ563V	MGF CHIP 1/10W 56K	
R6025	ERJ6GEYJ101V	MGF CHIP 1/10W 100	
R6026	ERJ6GEYJ101V	MGF CHIP 1/10W 100	
R6029	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6030	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6033	ERDS2TJ681	680	
R6034	ERJ6GEYJ472V	MGF CHIP 1/10W 4.7K	
R6035	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6037	ERDS2TJ391	390	
R6038	ERDS2TJ560	56	
R6051	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6052	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6053	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6056	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6057	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6058	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6059	ERJ6GEYJ182V	MGF CHIP 1/10W 1.8K	
R6060	ERJ6GEYJ475V	MGF CHIP 1/10W 4.7M	
R6061	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R6062	ERJ6GEYJ224V	MGF CHIP 1/10W 220K	
	(E,H)		
R6063	ERJ6GEYJ153V	MGF CHIP 1/10W 15K	
	(E,H)		
R6064	ERJ6GEYJ153V	MGF CHIP 1/10W 15K	
	(E,H)		
R6066	ERJ6GEYJ473V	MGF CHIP 1/10W 47K	
R6068	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6069	ERJ6GEYJ104V	MGF CHIP 1/10W 100K	
R6070	ERJ6GEYJ104V	MGF CHIP 1/10W 100K	
R6073	ERJ6GEYJ473V	MGF CHIP 1/10W 47K	
R6074	ERDS2TJ272	2.7K	
R6075	ERJ6GEYJ223V	MGF CHIP 1/10W 22K	
R6077	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6078	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6085	ERJ6GEYJ223V	MGF CHIP 1/10W 22K	
R6086	ERJ6GEYJ223V	MGF CHIP 1/10W 22K	
R6087	ERJ6GEYJ223V	MGF CHIP 1/10W 22K	
R6088	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R6093	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
	(H)		
R6094	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6099	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6102	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R6104	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6108	ERDS2TJ103	10K	
R6109	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6110	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6201	EVNCYAA03B15	VARIABLE 100K	
	(A,E)		
	EVMF6SA00B15	VARIABLE 100K	
	(H)		
R6202	ERJ6GEYJ104V	MGF CHIP 1/10W 100K	
R6203	ERJ6GEYJ333V	MGF CHIP 1/10W 33K	
R6204	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R6205	ERJ6GEYJ243V	MGF CHIP 1/10W 24K	
R6206	ERJ6GEYJ333V	MGF CHIP 1/10W 33K	
R6207	ERJ6GEYJ223V	MGF CHIP 1/10W 22K	
R6208	ERJ6GEYJ823V	MGF CHIP 1/10W 82K	
R6209	ERJ6GEYJ224V	MGF CHIP 1/10W 220K	
	(A,E)		
	ERJ6GEYJ184V	MGF CHIP 1/10W 180K	
	(H)		
R6210	ERJ6GEYJ475V	MGF CHIP 1/10W 4.7M	
	(E,H)		
R6211	ERJ6GEYJ221V	MGF CHIP 1/10W 220	
R6212	ERJ6GEYJ332V	MGF CHIP 1/10W 3.3K	
R6213	ERJ6GEYJ473V	MGF CHIP 1/10W 47K	
R6214	ERJ6GEYJ394V	MGF CHIP 1/10W 390K	
R6215	ERJ6GEYJ154V	MGF CHIP 1/10W 150K	
R6216	ERJ6GEYJ222V	MGF CHIP 1/10W 2.2K	
R6218	ERJ6GEYJ184V	MGF CHIP 1/10W 180K	
	(A,E)		
	ERJ6GEYJ154V	MGF CHIP 1/10W 150K	
	(H)		
R6219	ERJ6GEYJ274V	MGF CHIP 1/10W 270K	
R6221	ERJ6GEYJ221V	MGF CHIP 1/10W 220	
R6222	ERJ6GEYJ154V	MGF CHIP 1/10W 150K	
R6223	ERJ6GEYJ392V	MGF CHIP 1/10W 3.9K	
R6224	ERJ6GEYJ472V	MGF CHIP 1/10W 4.7K	
R6230	ERJ6GEYJ222V	MGF CHIP 1/10W 2.2K	
R6301	ERDS2TJ104	100K	
R6302	ERDS2TJ104	100K	
R6303	ERDS2TJ104	100K	
R6304	ERDS2TJ104	100K	

Ref. No.	Part No.	Part Name	Remarks
R6305	ERDS2TJ104	100K	
R6306	ERDS2TJ102	1K	
R6307	ERDS2TJ102	1K	
R6308	ERDS2TJ151	150	
R6309	ERDS2TJ151	150	
R6310	ERDS2TJ151	150	
R6311	ERDS2TJ151	150	
	(H)		
R6313	ERDS2TJ151	150	
	(H)		
R6314	ERDS2TJ151	150	
	(H)		
R6315	ERDS2TJ470	47	
R6390	ERDS2TJ562	5.6K	
	(H)		
R7001	ERJ6GEYJ473V	MGF CHIP 1/10W 47K	
	(A,E)		
R7002	ERJ6GEYJ271V	MGF CHIP 1/10W 270	
R7003	ERDS2TJ102	1K	
R7004	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R7006	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R7007	EVNCYAA03B24	VARIABLE 20K	
	(H)		
		CAPACITORS	
C1001	ECKRRS103ZVD	CERAMIC +80%-20% 125V 0.01	⚠
	OR VCKSTQG103ZY	CERAMIC +80%-20% 125V 0.01	⚠
	OR VCKSUQD103MY	CERAMIC +-20% 125V 0.01	⚠
C1002	ECKRRS332ME8	CERAMIC +-20% 125V 3300P	⚠
	OR VCKSTQG332MX	CERAMIC +-20% 125V 3300P	⚠
	OR VCKSUQD332MX	CERAMIC +-20% 125V 3300P	⚠
C1003	ECKRNB332ME8	CERAMIC +-20% 125V 3300P	⚠
	OR VCKSTQG332MX	CERAMIC +-20% 125V 3300P	⚠
	OR VCKSUQD332MX	CERAMIC +-20% 125V 3300P	⚠
C1004	ECEA2DU820YB	ELECTROLYTIC 200V 82	⚠
	OR VCESR2D820XB	ELECTROLYTIC 200V 82	⚠
	(A,E)		
	ECEA2DU121YB	ELECTROLYTIC 200V 120	⚠
	(H)		
C1005	ECA2DHG4R7B	ELECTROTIC 200V 4.7	
C1006	ECKW2H221KB5	CERAMIC 500V 220P	
C1007	VCYSBRC104MX	CERAMIC +-20% 16V 0.1	
C1009	ECQB1H103JF	POLYESTER +-5% 50V 0.01	
C1010	ECUV1H101JCM	C CHIP +-5% 50V 100P	
C1011	ECA1HM4R7B	ELECTROLYTIC 50V 4.7	AKEI
	(A,E)		
	ECEA1HGE4R7	ELECTROLYTIC 50V 4.7	
	(H)		
C1012	ECEA1PEE331	ELECTROLYTIC 18V 330	
C1013	ECEA1PEE331	ELECTROLYTIC 18V 330	
C1014	ECEA1HGE4R7	ELECTROLYTIC 50V 4.7	
	(A,E)		
	ECEA1HGE470	ELECTROLYTIC 50V 47	
	(H)		
C1016	ECEA1PEE331	ELECTROLYTIC 18V 330	
C1017	ECA0JM102B	ELECTROLYTIC 6.3V 1000	
	(A,E)		
	ECA0JFE102XB	ELECTROLYTIC 6.3V 1000	
	(H)		
C1018	ECQB1H104P9	POLYESTER +100%-0% 50V 0.1	
C1021	ECEA1HKG010	ELECTROLYTIC 50V 1	
C1023	ECKW1H103ZF5	CERAMIC +80%-20% 50V 0.01	
C1025	ECKRRS101MBY	CERAMIC +-20% 125V 100P	⚠
	OR VCKSTNG101KW	CERAMIC 125V 100P	⚠
	OR VCKSUND101KW	CERAMIC 125V 100P	⚠
C1027	ECKRRS103ZVD	CERAMIC +80%-20% 125V 0.01	⚠
	OR VCKSTQG103ZY	CERAMIC +80%-20% 125V 0.01	⚠
	OR VCKSUQD103MY	CERAMIC +-20% 125V 0.01	⚠
C1028	ECEA1PEE331	ELECTROLYTIC 18V 330	
C1029	ECUV1H101JCM	C CHIP +-5% 50V 100P	
C1030	VCYSBRE183KX	CERAMIC 25V 0.018	
C1032	ECEA0JKA470	ELECTROLYTIC 6.3V 47	
C1051	ECEA1HKAR47	ELECTROLYTIC 50V 0.47	
C1052	ECEA1CKA100	ELECTROLYTIC 16V 10	
C3001	ECA0JM471	ELECTROLYTIC 6.3V 470	
C3002	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C3011	ECUV1H103KBN	C CHIP 50V 0.01	

Ref. No.	Part No.	Part Name	Remarks
C3014	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C3015	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C3017	ECEA1EKA4R7	ELECTROLYTIC 25V 4.7	
C3018	ECUV1H181JCN	C CHIP +-5% 50V 180P	
C3019	ECUV1H560JCN	C CHIP +-5% 50V 56P	
C3021	ECUV1C224ZFN	C CHIP +80%-20% 16V 0.22	
C3022	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C3023	ECEA0JKA221	ELECTROLYTIC 6.3V 220	
C3024	ECEA0JKA470	ELECTROLYTIC 6.3V 47	
C3025	ECUV1H103ZFN	C CHIP +80%-20% 50V 0.01	
C3026	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C3027	ECUV1C224ZFN	C CHIP +80%-20% 16V 0.22	
C3028	ECEA1CKA100	ELECTROLYTIC 16V 10	
C3029	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C3030	ECEA0JKA221	ELECTROLYTIC 6.3V 220	
C3031	ECEA1HKA2R2	ELECTROLYTIC 50V 2.2	
C3032	ECEA1HKA2R2	ELECTROLYTIC 50V 2.2	
C3033	ECEA0JKA470	ELECTROLYTIC 6.3V 47	
C3034	ECEA1HKAR22	ELECTROLYTIC 50V 0.22	
C3035	ECUV1H560JCN	C CHIP +-5% 50V 56P	
C3036	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C3037	ECEA0JKA220	ELECTROLYTIC 6.3V 22	
C3039	ECUV1H822KBN	C CHIP 50V 8200P	
C3043	ECUV1H103ZFN	C CHIP +80%-20% 50V 0.01	
C3044	ECUV1C474ZFN	C CHIP +80%-20% 16V 0.47	
C3045	ECUV1C474ZFN	C CHIP +80%-20% 16V 0.47	
C3047	ECUV1H181JCN	C CHIP +-5% 50V 180P	
C3048	ECUV1H390JCN	C CHIP +-5% 50V 39P	
C3049	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C3050	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C3051	ECEA0JKA221	ELECTROLYTIC 6.3V 220	
C3052	ECUV1H103ZFN	C CHIP +80%-20% 50V 0.01	
C3053	ECEA1HKAR47	ELECTROLYTIC 50V 0.47	
C3054	ECEA1HKA2R2	ELECTROLYTIC 50V 2.2	
C3055	ECUV1H392KBN	C CHIP 50V 3900P	
C3056	ECEA1HKAR010	ELECTROLYTIC 50V 1	
C3057	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C3058	ECEA0JKA221	ELECTROLYTIC 6.3V 220	
C3062	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C3101	ECEA1HKA010	ELECTROLYTIC 50V 1	
C3102	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C3104	ECUV1H103ZFN	C CHIP +80%-20% 50V 0.01	
C3105	ECUV1H103ZFN	C CHIP +80%-20% 50V 0.01	
C3106	ECUV1H103ZFN	C CHIP +80%-20% 50V 0.01	
C3108	ECUV1H102KBN	C CHIP 50V 1000P	
C3109	ECEA0JKA221	ELECTROLYTIC 6.3V 220	
C3301	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C3302	ECUV1H103ZFN	C CHIP +80%-20% 50V 0.01	
C3304	ECUV1H103ZFN	C CHIP +80%-20% 50V 0.01	
C3305	ECUV1H181JCN	C CHIP +-5% 50V 180P	
C3306	ECEA1HKA010	ELECTROLYTIC 50V 1	
C3307	ECUV1H180GCN	C CHIP 50V 18P	
C3308	ECUV1H220JCN	C CHIP +-5% 50V 22P	
C3310	ECUV1H103ZFN	C CHIP +80%-20% 50V 0.01	
C3311	ECEA0JKA470	ELECTROLYTIC 6.3V 47	
C3312	ECUV1H150JCN	C CHIP +-5% 50V 15P	
C4001	ECUV1E104KBN	C CHIP 25V 0.1	
C4002	ECEA1HKA010	ELECTROLYTIC 50V 1	
C4003	ECUV1H392KBN	C CHIP 50V 3900P	
C4004	ECUV1H103KBN	C CHIP 50V 0.01	
C4005	ECEA0JKA220	ELECTROLYTIC 6.3V 22	
C4006	ECUV1H102KBN	C CHIP 50V 1000P	
C4007	ECEA0JKA220	ELECTROLYTIC 6.3V 22	
C4008	ECEA0JKA470	ELECTROLYTIC 6.3V 47	
C4009	ECEA1CKA100	ELECTROLYTIC 16V 10	
C4010	ECUV1E273KBN	C CHIP 25V 0.027	
C4011	ECUV1H822KBN	C CHIP 50V 8200P	
C4012	ECEA1HKA010	ELECTROLYTIC 50V 1	
C4014	ECEA1HKA010	ELECTROLYTIC 50V 1	
C4015	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C4017	ECUV1H103KBN	C CHIP 50V 0.01	
	(H)		
C4018	ECEA1HKA010	ELECTROLYTIC 50V 1	
	(A,E)		
C4101	ECUV1H221JCN	C CHIP +-5% 50V 220P	
C4102	ECHS1562JZ3	POLYESTER +-5% 100V 5600P	
C4103	ECUV1H103KBN	C CHIP 50V 0.01	
C4104	ECUV1H103KBN	C CHIP 50V 0.01	

Ref. No.	Part No.	Part Name	Remarks
C4106	ECEA1CKA220	ELECTROLYTIC 16V 22	
C4201	ECUV1E473KBN	C CHIP 25V 0.047	
	(H)		
C4202	ECUV1E473KBN	C CHIP 25V 0.047	
	(H)		
C4203	ECEA0JKA330	ELECTROLYTIC 6.3V 33	
	(H)		
C4204	ECEA0JKA330	ELECTROLYTIC 6.3V 33	
	(H)		
C4205	ECEA1HKA2R2	ELECTROLYTIC 50V 2.2	
	(H)		
C4206	ECEA1HKA2R2	ELECTROLYTIC 50V 2.2	
	(H)		
C4207	ECEA0JKA101	ELECTROLYTIC 6.3V 100	
	(H)		
C4208	ECEA0JKA101	ELECTROLYTIC 6.3V 100	
	(H)		
C4209	ECUV1H153KBN	C CHIP 50V 0.015	
	(H)		
C4210	ECUV1H153KBN	C CHIP 50V 0.015	
	(H)		
C4211	ECUV1H103KBN	C CHIP 50V 0.01	
	(H)		
C4212	ECUV1H103KBN	C CHIP 50V 0.01	
	(H)		
C4213	ECEA1HKA010	ELECTROLYTIC 50V 1	
	(H)		
C4214	ECEA1HKA010	ELECTROLYTIC 50V 1	
	(H)		
C4217	ECEA1HKA010	ELECTROLYTIC 50V 1	
	(H)		
C4218	ECEA1HKA010	ELECTROLYTIC 50V 1	
	(H)		
C4219	ECEA1CKA100	ELECTROLYTIC 16V 10	
	(H)		
C4220	ECEA1CKA100	ELECTROLYTIC 16V 10	
	(H)		
C4221	ECEA1CKA100	ELECTROLYTIC 16V 10	
	(H)		
C4222	ECEA1CKA100	ELECTROLYTIC 16V 10	
	(H)		
C4235	ECEA0JKA101	ELECTROLYTIC 6.3V 100	
	(H)		
C4236	ECEA0JKA470	ELECTROLYTIC 6.3V 47	
	(H)		
C4237	ECEA1CKA100	ELECTROLYTIC 16V 10	
	(H)		
C4238	ECEA1CKA100	ELECTROLYTIC 16V 10	
	(H)		
C4239	ECEA1HKA010	ELECTROLYTIC 50V 1	
	(H)		
C4240	ECUV1C224ZFN	C CHIP +80%-20% 16V 0.22	
	(H)		
C4242	ECUV1H103ZFN	C CHIP +80%-20% 50V 0.01	
	(H)		
C4244	ERJ6GEY0R00V	MGF CHIP 1/10W 0	●
	(H)		
C4601	ECEA1CKA100	ELECTROLYTIC 16V 10	
	(H)		
C4603	ECEA1CKA100	ELECTROLYTIC 16V 10	
C4606	ECEA1CKA100	ELECTROLYTIC 16V 10	
	(H)		
C6002	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C6004	ECUV1H101JCN	C CHIP +-5% 50V 100P	
C6005	ECUV1H150GCN	C CHIP +-2% 50V 15P	
C6006	ECUV1H120JCN	C CHIP +-5% 50V 12P	
C6007	ECUV1H101JCN	C CHIP +-5% 50V 100P	
C6008	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C6009	ECUV1H101JCN	C CHIP +-5% 50V 100P	
C6010	ECUV1H101JCN	C CHIP +-5% 50V 100P	
C6016	ECEA0JU471	ELECTROLYTIC 6.3V 470	
C6019	ECEA0JKA101	ELECTROLYTIC 6.3V 100	
C6201	ECEA0JKA470	ELECTROLYTIC 6.3V 47	
C6202	ECEA0JKA330	ELECTROLYTIC 6.3V 33	
C6203	ECUV1H103KBN	C CHIP 50V 0.01	
C6204	ECUV1H103KBN	C CHIP 50V 0.01	
C6205	ECUV1H102KBN	C CHIP 50V 1000P	
C6206	ECUV1H103KBN	C CHIP 50V 0.01	

Ref. No.	Part No.	Part Name	Remarks
C6207	ECQB1H393KF	POLYESTER 50V 0.039	
C6208	ECEA1HKA010	ELECTROLYTIC 50V 1	
C6209	ECEA1CKA100	ELECTROLYTIC 16V 10	
C6211	ECUV1H272KBN	C CHIP 50V 2700P	
C6212	ECUV1E104KBN	C CHIP 25V 0.1	
C6213	ECUV1H151KN	C CHIP 50V 150P	
C6214	ECUV1H102KBN	C CHIP 50V 1000P	
C6217	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C6218	ECEA1CKA100	ELECTROLYTIC 16V 10	
C6221	ECEA0JKA220	ELECTROLYTIC 6.3V 22	
C6222	ECUV1H272KBN	C CHIP 50V 2700P	
C6223	ECUV1E333KBN	C CHIP 25V 0.033	
C6224	ECEA0JKA101	ELECTROLYTIC 6.3V 100	
C6228	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C6301	ECEA0JKA470	ELECTROLYTIC 6.3V 47	
C6390	ECEA1CKA470	ELECTROLYTIC 16V 47	
	(H)		
C7001	ECEA0JKA221	ELECTROLYTIC 6.3V 220	
C7003	ECU1H103ZFN	C CHIP +80%-20% 50V 0.01	
C7005	ECUV1E183KBN	C CHIP 25V 0.018	
	(A,E)		
C7006	ECUV1H103ZFN	C CHIP +80%-20% 50V 0.01	
C7008	ECEA1CKA101	ELECTROLYTIC 16V 100	
C7010	ECUV1H102KBN	C CHIP 50V 1000P	
C7015	ECUV1C105ZFN	C CHIP +80%-20% 16V 1	
C7018	ECUV1H103ZFN	C CHIP +80%-20% 50V 0.01	
C7019	ECUV1H103ZFN	C CHIP +80%-20% 50V 0.01	
C7020	ECUV1H103ZFN	C CHIP +80%-20% 50V 0.01	
C7022	ECUV1H330JCN	C CHIP +-5% 50V 33P	
C7023	ECUV1H330JCN	C CHIP +-5% 50V 33P	
C7024	ECUV1H103KBN	C CHIP 50V 0.01	
		COILS	
L1001	ELF15N005AB	HIGH PASS FILTER 0.5A 18M	⚠
	OR VLQS0166	HIGH PASS FILTER 0.5A 18M	⚠
	OR VLQS0167	HIGH PASS FILTER 0.5A 18M	⚠
L1002	VLQSAB7D220K	22	
L1003	VLQSAB7D100K	10	
L1006	VLPS0083		
L3014	VLQSH02R470K	47	
L3016	ELESN330KA	33	
L3018	ELESN470KA	47	
L3101	ELESN101KA	100	
L3302	VLQSH02R180J	+-5% 18	
L4001	ELELN153KA	15M	
L4101	ELESN471KA	470	
L7001	ELESN120KA	12	
L7002	ELESN101KA	100	
L7004	VLPS0092	CHIP	
		CRYSTAL OSCILLATOR	
X3010	VSXS0195		
X6001	VSXS0191		
		PIN HEADERS	
P1001	VJPS1154	CONNECTOR 2P	
P3001	VJPS0882	CONNECTOR 12P	
	(A)		
	VJPS0884	CONNECTOR 15P	
	(E)		
	VJPS0885	CONNECTOR 20P	
	(H)		
P4001	VJSS0888	FE CONNECTOR 2P	
P6002	VJPS0881	CONNECTOR 8P	
P6201	VJPS0883	CONNECTOR 14P	
		SWITCHES	
SW6001	VSHS0058	LEAF SWITCH-SAFETY TAB	
SW6002	VSSS0159	MODE SELECT SWITCH	
SW6301	EVQ21309K	PUSH SWITCH	
SW6303	EVQ21309K	PUSH SWITCH	
SW6305	EVQ21309K	PUSH SWITCH	
SW6306	EVQ21309K	PUSH SWITCH	
SW6310	EVQ21309K	PUSH SWITCH	

(E21, E23, E24, E26)

Ref. No.	Part No.	Part Name	Remarks
SW6311	EVQ21309K	PUSH SWITCH	
SW6312	EVQ21309K	PUSH SWITCH	
SW6313	EVQ21309K	PUSH SWITCH	
SW6315	EVQ21309K	PUSH SWITCH	
SW7001	VSSS0152	SELECT SWITCH	
		FUSE & PROTECTOR	
F1001	VSFS0003A16	FUSE 125V 1.6A	⚠
	OR VSFS0028A16	FUSE 125V 1.6A	⚠
	OR VSFS0030B16	FUSE 125V 1.6A	⚠
	OR XBA1C16NU100	FUSE 125V 1.6A	⚠
PR1001	ICP-N38-TP1	IC PROTECTOR 1.5A	⚠
	OR UNH000600A	IC PROTECTOR 1.5A	⚠
PR1002	ICP-N38-TP1	IC PROTECTOR 1.5A	⚠
	OR UNH000600A	IC PROTECTOR 1.5A	⚠
		TRANSFORMER	
T1001	ETS28AD1F5NP		⚠
	OR VTPS0034-1		⚠
	OR VTPS0038-1		⚠
	OR VTPS0040-1		⚠
T4101	EIQ7QF018Q		
		MISCELLANEOUS	
JK3001	VJHS0720	A/V JACK SOCKET	
	(A,E)		
	VJHS0727	A/V JACK SOCKET	
	(H)		
E21	VEQS0602A	TUNER, UHF/VHF NR	
	(A,E)		
E21	VEQS0603	TUNER, UHF/VHF NR	
	(H)		
E23	VJSS0896	FUSE HOLDER	
E24	VEKS5526	LED HOLDER UNIT	
E26	VCRS0213	MTS/SAP HIC	
	(H)		
		MAIN C.B.A.	■
		(B,C,D,F,G)	
		INTEGRATED CIRCUITS	
IC1001	PS2501-1-X	IC, LINEAR ERROR V. DET	⚠
	OR ON3131-R.KT	IC, LINEAR ERROR V. DET	⚠
	OR ON3131-S.KT	IC, LINEAR ERROR V. DET	⚠
IC3001	AN3475FBP	IC, LINEAR VIDEO/AUDIO PROCESS	
IC3101	MN3885S	IC, CCD 1H DELAY	E.S.D.
IC3301	LC74723M9629	IC, LOGIC CHARACTER GENERATOR	E.S.D.
IC4201	AN3962FB-V	IC, LINEAR Hi-Fi AUDIO PROCESS	
	(F,G)		
IC6001	MN675048A5A3	IC, 8BIT MICROPROCESSOR	E.S.D.
IC6002	CNA1801N	REEL SENSOR UNIT	
IC6003	CNA1801N	REEL SENSOR UNIT	
IC6301	T47C216FF917	IC, 4BIT MICROCONTROLLER	E.S.D.
		TRANSISTORS	
Q1001	2SC4533LP.KT		⚠
	OR 2SC5130LF608		⚠
Q1002	2SD2259		
Q1003	2SD601A(R,S)	CHIP	
Q1004	2SB709A(Q,R)	CHIP	
Q1005	2SB709A(Q,R)	CHIP	
Q1051	2SD2159(T)		
	(B,C,D)		
	2SD2375(P,Q)		
	(F,G)		
Q1052	2SD601(R,S)	CHIP	
Q3001	2SB709(R,S)	CHIP	
Q4001	2SB709A(Q,R,S)	CHIP	
Q4002	2SD601A(R,S)	CHIP	

Ref. No.	Part No.	Part Name	Remarks
Q4003	2SD601A(R,S)	CHIP	
Q4101	2SD601(R,S)	CHIP	
Q4601	2SD601(R,S)	CHIP	
	(F,G)		
Q6002	2SB709(R,S)	CHIP	
Q6003	2SD601(R,S)	CHIP	
Q6005	2SB709(R,S)	CHIP	
Q6006	2SD601(R,S)	CHIP	
Q6008	2SD601(R,S)	CHIP	
Q6009	VEKS5522	PHOTO SENSOR UNIT	
Q6010	VEKS5522	PHOTO SENSOR UNIT	
		DIODES	
D1001	S1WBA40		⚠
	OR S1WBA60		⚠
D1002	ERA18-04V3		
D1003	ERA18-04V3		
D1005	ERA18-04V3		
D1006	RU2YXLFC1		
	(B,C,D)		
	RU3YXLFC1		
	(F,G)		
D1007	MA188		
	(B,C,D)		
	ERA18-04V3		
	(F,G)		
D1008	ERB81-004V1		
D1009	MA178		
	(B,C,D)		
	AK03V0		
	(F,G)		
D1011	MA4051NH	ZENER 5.1V	
D1012	MA858		
D1013	MA165		
D1015	MA7180A-TR	ZENER 18V	⚠
	OR MA7180B-TR	ZENER 18V	⚠
D1016	MA165		
D1051	MA4100N	ZENER 10V	
D1052	MA165		
D1053	MA165		
D3004	MA4091-M	ZENER 9.1V	
D4201	MA165		
	(F,G)		
D6001	VEKS5521	SENSOR LED UNIT	
D6002	MA165		
D6003	MA165		
D6007	MA165		
D6201	MA165		
D6202	MA165		
D6203	MA165		
D6204	MA165		
D6324	MA4068-M	ZENER 6.8V	
D7002	MA4300-TA	ZENER 30V	
		RESISTORS	
R1001	VRESC2TK275T	+-10% 1/2W 2.7M	⚠
R1003	VRESE2TJ334	1/2W 330K	
R1004	ERG2SJW333E	METAL OXIDE 2W 33K	
R1005	ERG1SJW560E	METAL OXIDE 1W 56	
R1006	ERJ6GEYJ222V	MGF CHIP 1/10W 2.2K	
R1007	ERDS2TJ101	100	
R1008	ERDS2TJ392	3.9K	
R1010	ERD25FYJ100T	10	⚠
R1011	ERD25FYJ100T	10	⚠
	(B,C,D)		
	ERD25FYJ4R7T	4.7	⚠
	(F,G)		
R1014	ERJ6GEYJ221V	MGF CHIP 1/10W 220	
R1015	ERJ6GEYJ221V	MGF CHIP 1/10W 220	
R1016	ERJ6GEYJ562V	MGF CHIP 1/10W 5.6K	
R1017	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R1018	ERJ6GEYJ183V	MGF CHIP 1/10W 18K	
R1019	ERJ6GEYJ392V	MGF CHIP 1/10W 3.9K	
R1020	ERJ6GEYJ682V	MGF CHIP 1/10W 6.8K	
R1022	ERJ6GEYJ221V	MGF CHIP 1/10W 220	

Ref. No.	Part No.	Part Name	Remarks
R1024	ERD2FCVG121T	+-2% 120	⚠
	(B,C,D)		
	ERD2FCVG330T	+-2% 33	⚠
	(F,G)		
R1051	ERJ6GEYJ472V	MGF CHIP 1/10W 4.7K	
R1052	ERDS2TJ123	12K	
	(B,C,D)		
	ERDS2TJ153	15K	
	(F,G)		
R1053	ERDS2TJ153	15K	
	(F,G)		
R3002	ERJ6GEYJ331V	MGF CHIP 1/10W 330	
R3003	ERJ6GEYJ561V	MGF CHIP 1/10W 560	
R3004	ERJ6GEYJ750V	MGF CHIP 1/10W 75	
R3005	ERDS2TJ101	100	
R3021	ERJ6GEYJ332V	MGF CHIP 1/10W 3.3K	
R3022	ERJ6GEYJ152V	MGF CHIP 1/10W 1.5K	
R3023	ERJ6GEYJ121V	MGF CHIP 1/10W 120	
R3027	ERJ6GEYJ821V	MGF CHIP 1/10W 820	
R3029	ERJ6GEYJ125V	MGF CHIP 1/10W 1.2M	
R3030	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R3031	ERJ6GEYJ474V	MGF CHIP 1/10W 470K	
R3033	ERJ6GEYJ222V	MGF CHIP 1/10W 2.2K	
R3034	ERJ6GEYJ121V	MGF CHIP 1/10W 120	
R3035	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R3036	ERJ6GEYJ122V	MGF CHIP 1/10W 1.2K	
R3041	ERJ6GEYJ750V	MGF CHIP 1/10W 75	
R3301	ERJ6GEYJ222V	MGF CHIP 1/10W 2.2K	
R3302	ERJ6GEYJ222V	MGF CHIP 1/10W 2.2K	
R3303	ERJ6GEYJ473V	MGF CHIP 1/10W 47K	
R4001	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R4002	ERJ6GEYJ334V	MGF CHIP 1/10W 330K	
R4003	ERJ6GEYJ221V	MGF CHIP 1/10W 220	
R4004	ERJ6GEYJ333V	MGF CHIP 1/10W 33K	
R4005	ERJ6GEYJ225V	MGF CHIP 1/10W 2.2M	
R4006	ERJ6GEYJ681V	MGF CHIP 1/10W 680	
R4007	ERJ6GEYJ821V	MGF CHIP 1/10W 820	
R4008	ERJ6GEYG223V	MGF CHIP +-2% 1/10W 22K	
R4009	ERJ6GEYJ473V	MGF CHIP 1/10W 47K	
	(B,C,D)		
R4010	ERJ6GEYJ473V	MGF CHIP 1/10W 47K	
	(B,C,D)		
	ERJ6GEYJ123V	MGF CHIP 1/10W 12K	
	(F,G)		
R4011	ERJ6GEYJ562V	MGF CHIP 1/10W 5.6K	
	(B,C,D)		
	ERJ6GEYJ682V	MGF CHIP 1/10W 6.8K	
	(F,G)		
R4012	ERJ6GEYJ682V	MGF CHIP 1/10W 6.8K	
R4013	ERJ6GEY0R00V	MGF CHIP 1/10W 0	●
	(B,C,D)		
R4014	ERJ6GEYJ472V	MGF CHIP 1/10W 4.7K	
R4015	ERJ6GEYJ222V	MGF CHIP 1/10W 2.2K	
R4017	ERJ6GEYJ561V	MGF CHIP 1/10W 560	
R4018	ERJ6GEYJ562V	MGF CHIP 1/10W 5.6K	
	(B,C,D)		
R4019	VCYSARH102KB	CERAMIC 50V 1000P	
R4028	ERJ6GEYJ222V	MGF CHIP 1/10W 2.2K	
R4101	ERJ6GEYJ224V	MGF CHIP 1/10W 220K	
R4102	ERJ6GEYG333V	MGF CHIP +-2% 1/10W 33K	
R4103	ERJ6GEYJ153V	MGF CHIP 1/10W 15K	
R4201	ERJ6GEYJ472V	MGF CHIP 1/10W 4.7K	
	(F,G)		
R4202	ERJ6GEYJ472V	MGF CHIP 1/10W 4.7K	
	(F,G)		
R4203	ERJ6GEYJ511V	MGF CHIP 1/10W 510	
	(F,G)		
R4204	ERJ6GEYJ511V	MGF CHIP 1/10W 510	
	(F,G)		
R4205	ERJ6GEYG333V	MGF CHIP +-2% 1/10W 33K	
	(F,G)		
R4206	ERJ6GEYG333V	MGF CHIP +-2% 1/10W 33K	
	(F,G)		
R4207	ERJ6GEYG153V	MGF CHIP +-2% 1/10W 15K	
	(F,G)		
R4208	ERJ6GEYG153V	MGF CHIP +-2% 1/10W 15K	
	(F,G)		

Ref. No.	Part No.	Part Name	Remarks
R4209	ERJ6GEYG333V	MGF CHIP +-2% 1/10W 33K	
	(G)		
R4210	ERJ6GEYG333V	MGF CHIP +-2% 1/10W 33K	
	(G)		
R4211	ERJ6GEYG153V	MGF CHIP +-2% 1/10W 15K	
	(G)		
R4212	ERJ6GEYG153V	MGF CHIP +-2% 1/10W 15K	
	(G)		
R4213	ERJ6GEYJ333V	MGF CHIP 1/10W 33K	
	(F,G)		
R4214	ERJ6GEYJ333V	MGF CHIP 1/10W 33K	
	(F,G)		
R4215	ERJ6GEYJ153V	MGF CHIP 1/10W 15K	
	(F,G)		
R4216	ERJ6GEYJ153V	MGF CHIP 1/10W 15K	
	(F,G)		
R4217	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
	(F,G)		
R4218	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
	(F,G)		
R4219	ERJ6GEYJ683V	MGF CHIP 1/10W 68K	
	(F,G)		
R4220	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
	(F,G)		
R4221	ERJ6GEYJ101V	MGF CHIP 1/10W 100	
	(F,G)		
R4222	ERJ6GEYJ101V	MGF CHIP 1/10W 100	
	(F,G)		
R4226	ERJ6GEY0R00V	MGF CHIP 1/10W 0	●
	(F,G)		
R4230	ERJ6GEY0R00V	MGF CHIP 1/10W 0	●
	(F,G)		
R4234	ERJ6GEY0R00V	MGF CHIP 1/10W 0	●
	(F,G)		
R4240	ERJ6GEY0R00V	MGF CHIP 1/10W 0	●
	(F,G)		
R4241	ERA6YEB153V	MGF CHIP +-0.1% 1/10W 15K	
	(F,G)		
R4243	ERDS2TJ152	1.5K	
	(F,G)		
R4244	ERJ6GEYJ152V	MGF CHIP 1/10W 1.5K	
	(F,G)		
R4245	ERJ6GEY0R00V	MGF CHIP 1/10W 0	●
	(F,G)		
R4246	ERJ6GEYJ333V	MGF CHIP 1/10W 33K	
	(F,G)		
R4247	ERJ6GEYJ123V	MGF CHIP 1/10W 12K	
	(F,G)		
R4248	ERJ6GEY0R00V	MGF CHIP 1/10W 0	●
	(F,G)		
R4249	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
	(F,G)		
R4601	ERJ6GEYJ123V	MGF CHIP 1/10W 12K	
	(F,G)		
R4602	ERJ6GEYJ472V	MGF CHIP 1/10W 4.7K	
	(B,C,D)		
	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
	(F,G)		
R4604	ERJ6GEYJ561V	MGF CHIP 1/10W 560	
	(F,G)		
R4605	ERJ6GEYJ562V	MGF CHIP 1/10W 5.6K	
	(F,G)		
R4606	ERJ6GEYJ682V	MGF CHIP 1/10W 6.8K	
	(F,G)		
R4607	ERJ6GEYJ101V	MGF CHIP 1/10W 100	
	(F,G)		
R4608	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
	(B,C,D)		
R4870	ERJ6GEYJ223V	MGF CHIP 1/10W 22K	
R6001	ERDS2TJ561	560	
R6002	ERDS2TJ561	560	
R6004	ERJ6GEYJ333V	MGF CHIP 1/10W 33K	
	(F,G)		
R6005	ERJ6GEYJ223V	MGF CHIP 1/10W 22K	
	(F,G)		
R6006	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6012	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6014	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	

Ref. No.	Part No.	Part Name	Remarks
R6015	ERJ6GEYJ562V	MGF CHIP 1/10W 5.6K	
R6019	ERJ6GEYJ223V	MGF CHIP 1/10W 22K	
R6020	ERJ6GEYJ223V	MGF CHIP 1/10W 22K	
R6021	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R6022	ERJ6GEYJ223V	MGF CHIP 1/10W 22K	
R6023	ERJ6GEYJ563V	MGF CHIP 1/10W 56K	
R6024	ERJ6GEYJ563V	MGF CHIP 1/10W 56K	
R6025	ERJ6GEYJ101V	MGF CHIP 1/10W 100	
R6026	ERJ6GEYJ101V	MGF CHIP 1/10W 100	
R6029	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6030	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6033	ERDS2TJ681	680	
R6034	ERJ6GEYJ472V	MGF CHIP 1/10W 4.7K	
R6035	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6037	ERDS2TJ391	390	
R6038	ERDS2TJ560	56	
R6051	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6052	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6053	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6056	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6057	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6058	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6059	ERJ6GEYJ182V	MGF CHIP 1/10W 1.8K	
R6060	ERJ6GEYJ475V	MGF CHIP 1/10W 4.7M	
R6061	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R6062	ERJ6GEYJ224V	MGF CHIP 1/10W 220K	
R6063	ERJ6GEYJ153V	MGF CHIP 1/10W 15K	
R6064	ERJ6GEYJ153V	MGF CHIP 1/10W 15K	
R6066	ERJ6GEYJ473V	MGF CHIP 1/10W 47K	
R6068	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6069	ERJ6GEYJ104V	MGF CHIP 1/10W 100K	
R6070	ERJ6GEYJ104V	MGF CHIP 1/10W 100K	
R6073	ERJ6GEYJ473V	MGF CHIP 1/10W 47K	
R6074	ERDS2TJ272	2.7K	
R6075	ERJ6GEYJ223V	MGF CHIP 1/10W 22K	
R6077	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6085	ERJ6GEYJ223V	MGF CHIP 1/10W 22K	
R6086	ERJ6GEYJ223V	MGF CHIP 1/10W 22K	
R6087	ERJ6GEYJ223V	MGF CHIP 1/10W 22K	
R6088	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R6093	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
	(F,G)		
R6094	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6099	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6102	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R6109	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6110	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6201	EVNCYAA03B15	VARIABLE 100K	
	(B,C,D)		
	EVMF6SA00B15	VARIABLE 100K	
	(F,G)		
R6202	ERJ6GEYJ104V	MGF CHIP 1/10W 100K	
R6203	ERJ6GEYJ333V	MGF CHIP 1/10W 33K	
R6204	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R6205	ERJ6GEYJ243V	MGF CHIP 1/10W 24K	
R6206	ERJ6GEYJ333V	MGF CHIP 1/10W 33K	
R6207	ERJ6GEYJ223V	MGF CHIP 1/10W 22K	
R6208	ERJ6GEYJ823V	MGF CHIP 1/10W 82K	
R6209	ERJ6GEYJ224V	MGF CHIP 1/10W 220K	
	(B,C,D)		
	ERJ6GEYJ184V	MGF CHIP 1/10W 180K	
	(F,G)		
R6210	ERJ6GEYJ475V	MGF CHIP 1/10W 4.7M	
R6211	ERJ6GEYJ221V	MGF CHIP 1/10W 220	
R6212	ERJ6GEYJ332V	MGF CHIP 1/10W 3.3K	
R6213	ERJ6GEYJ473V	MGF CHIP 1/10W 47K	
R6214	ERJ6GEYJ394V	MGF CHIP 1/10W 390K	
R6215	ERJ6GEYJ154V	MGF CHIP 1/10W 150K	
R6216	ERJ6GEYJ222V	MGF CHIP 1/10W 2.2K	
R6218	ERJ6GEYJ184V	MGF CHIP 1/10W 180K	
	(B,C,D)		
	ERJ6GEYJ154V	MGF CHIP 1/10W 150K	
	(F,G)		
R6219	ERJ6GEYJ274V	MGF CHIP 1/10W 270K	
R6221	ERJ6GEYJ221V	MGF CHIP 1/10W 220	
R6222	ERJ6GEYJ154V	MGF CHIP 1/10W 150K	
R6223	ERJ6GEYJ392V	MGF CHIP 1/10W 3.9K	
R6224	ERJ6GEYJ472V	MGF CHIP 1/10W 4.7K	
R6228	ERJ6GEYJ152V	MGF CHIP 1/10W 1.5K	
	(F,G)		
R6230	ERJ6GEYJ222V	MGF CHIP 1/10W 2.2K	
R6303	ERJ6GEYJ223V	MGF CHIP 1/10W 22K	
R6304	ERJ6GEYJ223V	MGF CHIP 1/10W 22K	
R6305	ERJ6GEYJ223V	MGF CHIP 1/10W 22K	
R6306	ERJ6GEYJ223V	MGF CHIP 1/10W 22K	
R6316	ERJ6GEYJ101V	MGF CHIP 1/10W 100	
R6346	ERDS2TJ470	47	
R6350	ERDS2TJ820	82	
R6351	ERDS2TJ750	75	
	(B,C,D)		
	ERDS2TJ820	82	
	(F,G)		
R6352	ERDS2TJ750	75	
	(B,C,D)		
	ERDS2TJ101	100	
	(F,G)		
R6353	ERJ6GEYJ473V	MGF CHIP 1/10W 47K	
R6358	ERJ6GEYJ223V	MGF CHIP 1/10W 22K	
R6359	VLQSH02R101K	100	
R7001	ERJ6GEYJ473V	MGF CHIP 1/10W 47K	
	(B,C,D)		
R7002	ERJ6GEYJ271V	MGF CHIP 1/10W 270	
R7003	ERDS2TJ102	1K	
R7004	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
	(B,C,D)		
	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
	(F,G)		
R7006	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R7007	EVNCYAA03B24	VARIABLE 20K	
	(F,G)		
		CAPACITORS	
C1001	ECKRRS103ZVD	CERAMIC +80%-20% 125V 0.01	⚠
	OR VCKSTQG103ZY	CERAMIC +80%-20% 125V 0.01	⚠
	OR VCKSUQD103MY	CERAMIC +-20% 125V 0.01	⚠
C1002	ECKRRS332ME8	CERAMIC +-20% 125V 3300P	⚠
	OR VCKSTQG332MX	CERAMIC +-20% 125V 3300P	⚠
	OR VCKSUQD332MX	CERAMIC +-20% 125V 3300P	⚠
C1003	ECKRNB332ME8	CERAMIC +-20% 125V 3300P	⚠
	OR VCKSTQG332MX	CERAMIC +-20% 125V 3300P	⚠
	OR VCKSUQD332MX	CERAMIC +-20% 125V 3300P	⚠
C1004	ECEA2DU820YB	ELECTROLYTIC 200V 82	⚠
	(B,C,D)		
	ECEA2DU121YB	CERAMIC 200V 120	⚠
	(F,G)		
C1005	ECA2DHG4R7B	ELECTROTIC 200V 4.7	
C1006	ECKW2H221KB5	CERAMIC 500V 220P	
C1007	VCYSBRC104MX	CERAMIC +-20% 16V 0.1	
C1009	ECQB1H103JF	POLYESTER +-5% 50V 0.01	
C1010	ECUV1H101JCM	C CHIP +-5% 50V 100P	
C1011	ECA1HM4R7B	ELECTROLYTIC 50V 4.7	
	(B,C,D)		
	ECEA1HGE4R7	ELECTROLYTIC 50V 4.7	
	(F,G)		
C1012	ECEA1PEE331	ELECTROLYTIC 18V 330	
C1013	ECEA1PEE331	ELECTROLYTIC 18V 330	
C1014	ECEA1HGE4R7	ELECTROLYTIC 50V 4.7	
	(B,C,D)		
	ECEA1HGE470	ELECTROLYTIC 50V 47	
	(F,G)		
C1016	ECEA1PEE331	ELECTROLYTIC 18V 330	
C1017	ECA0JM102B	ELECTROLYTIC 6.3V 1000	
	(B,C,D)		
	ECA0JFE102XB	ELECTROLYTIC 6.3V 1000	
	(F,G)		
C1018	ECQB1H104P9	POLYESTER +100%-0% 50V 0.1	
C1019	ECA0JEE101	ELECTROLYTIC 6.3V 100	
C1021	ECEA1HKG010	ELECTROLYTIC 50V 1	
C1023	ECKW1H103ZF5	CERAMIC +80%-20% 50V 0.01	
C1025	ECKRRS101MBY	CERAMIC +-20% 125V 100P	⚠
	OR VCKSTNG101KW	CERAMIC 125V 100P	⚠
	OR VCKSUND101KW	CERAMIC 125V 100P	⚠
C1027	ECKRRS103ZVD	CERAMIC +80%-20% 125V 0.01	⚠
	OR VCKSTQG103ZY	CERAMIC +80%-20% 125V 0.01	⚠
	OR VCKSUQD103MY	CERAMIC +-20% 125V 0.01	⚠

Ref. No.	Part No.	Part Name	Remarks
C1028	ECEA1PEE331	ELECTROLYTIC 18V 330	
C1029	ECUV1H101JCN	C CHIP +-5% 50V 100P	
C1030	VCYSBRE183KX	CERAMIC 25V 0.018	
C1032	ECEA0JKA470	ELECTROLYTIC 6.3V 47	
C1051	ECEA1HKAR47	ELECTROLYTIC 50V 0.47	
C1052	ECEA1CKA100	ELECTROLYTIC 16V 10	
C3001	ECA0JM471	ELECTROLYTIC 6.3V 470	
C3002	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C3011	ECUV1H103KBN	C CHIP 50V 0.01	
C3014	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C3015	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C3017	ECEA1EKA4R7	ELECTROLYTIC 25V 4.7	
C3018	ECUV1H181JCN	C CHIP +-5% 50V 180P	
C3019	ECUV1H560JCN	C CHIP +-5% 50V 56P	
C3021	ECUV1C224ZFN	C CHIP +80%-20% 16V 0.22	
C3022	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C3023	ECEA0JKA221	ELECTROLYTIC 6.3V 220	
C3024	ECEA0JKA470	ELECTROLYTIC 6.3V 47	
C3025	ECUV1H103ZFN	C CHIP +80%-20% 50V 0.01	
C3026	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C3027	ECUV1C224ZFN	C CHIP +80%-20% 16V 0.22	
C3028	ECEA1CKA100	ELECTROLYTIC 16V 10	
C3029	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C3030	ECEA0JKA221	ELECTROLYTIC 6.3V 220	
C3031	ECEA1HKA2R2	ELECTROLYTIC 50V 2.2	
C3032	ECEA1HKA2R2	ELECTROLYTIC 50V 2.2	
C3033	ECEA0JKA470	ELECTROLYTIC 6.3V 47	
C3034	ECEA1HKAR22	ELECTROLYTIC 50V 0.22	
C3035	ECUV1H560JCN	C CHIP +-5% 50V 56P	
C3036	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C3037	ECEA0JKA220	ELECTROLYTIC 6.3V 22	
C3038	ECA1HKA2R2	ELECTROLYTIC 50V 2.2	
	(G)		
C3039	ECUV1H822KBN	C CHIP 50V 8200P	
C3043	ECUV1H103ZFN	C CHIP +80%-20% 50V 0.01	
C3044	ECUV1C474ZFN	C CHIP +80%-20% 16V 0.47	
C3045	ECUV1C474ZFN	C CHIP +80%-20% 16V 0.47	
C3047	ECUV1H181JCN	C CHIP +-5% 50V 180P	
C3048	ECUV1H390JCN	C CHIP +-5% 50V 39P	
C3049	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C3050	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C3051	ECEA0JKA221	ELECTROLYTIC 6.3V 220	
C3052	ECUV1H103ZFN	C CHIP +80%-20% 50V 0.01	
C3053	ECEA1HKAR47	ELECTROLYTIC 50V 0.47	
C3054	ECEA1HKA2R2	ELECTROLYTIC 50V 2.2	
C3055	ECUV1H392KBN	C CHIP 50V 3900P	
C3056	ECEA1HKA010	ELECTROLYTIC 50V 1	
C3057	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C3058	ECEA0JKA221	ELECTROLYTIC 6.3V 220	
C3062	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C3101	ECEA1HKA010	ELECTROLYTIC 50V 1	
C3102	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C3104	ECUV1H103ZFN	C CHIP +80%-20% 50V 0.01	
C3105	ECUV1H103ZFN	C CHIP +80%-20% 50V 0.01	
C3106	ECUV1H103ZFN	C CHIP +80%-20% 50V 0.01	
C3108	ECUV1H102KBN	C CHIP 50V 1000P	
C3109	ECEA0JKA221	ELECTROLYTIC 6.3V 220	
C3301	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C3302	ECUV1H103ZFN	C CHIP +80%-20% 50V 0.01	
C3304	ECUV1H103ZFN	C CHIP +80%-20% 50V 0.01	
C3305	ECUV1H181JCN	C CHIP +-5% 50V 180P	
C3306	ECEA1HKA010	ELECTROLYTIC 50V 1	
C3307	ECUV1H180GCN	C CHIP +-2% 50V 18P	
C3308	ECUV1H220JCN	C CHIP +-5% 50V 22P	
C3310	ECUV1H103ZFN	C CHIP +80%-20% 50V 0.01	
C3311	ECEA0JKA470	ELECTROLYTIC 6.3V 47	
C3312	ECUV1H150JCN	C CHIP +-5% 50V 15P	
C4001	ECUV1E104KBN	C CHIP 25V 0.1	
C4002	ECEA1HKA010	ELECTROLYTIC 50V 1	
C4003	ECUV1H392KBN	C CHIP 50V 3900P	
C4004	ECUV1H103KBN	C CHIP 50V 0.01	
C4005	ECEA0JKA220	ELECTROLYTIC 6.3V 22	
C4006	ECUV1H102KBN	C CHIP 50V 1000P	
C4007	ECEA0JKA220	ELECTROLYTIC 6.3V 22	
C4008	ECEA0JKA470	ELECTROLYTIC 6.3V 47	
C4009	ECEA1CKA100	ELECTROLYTIC 16V 10	
C4010	ECUV1E273KBN	C CHIP 25V 0.027	
C4011	ECUV1H822KBN	C CHIP 50V 8200P	
C4012	ECEA1HKA010	ELECTROLYTIC 50V 1	
C4014	ECEA1HKA010	ELECTROLYTIC 50V 1	
C4015	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C4017	ECUV1H103KBN	C CHIP 50V 0.01	
	(F,G)		
C4018	ECEA1HKA010	ELECTROLYTIC 50V 1	
	(B,C,D)		
C4101	ECUV1H221JCN	C CHIP +-5% 50V 220P	
C4102	ECHS1562JZ3	POLYESTER +-5% 100V 5600P	
C4103	ECUV1H103KBN	C CHIP 50V 0.01	
C4104	ECUV1H103KBN	C CHIP 50V 0.01	
C4106	ECEA1CKA220	ELECTROLYTIC 16V 22	
C4201	ECUV1E473KBN	C CHIP 25V 0.047	
	(F,G)		
C4202	ECUV1E473KBN	C CHIP 25V 0.047	
	(F,G)		
C4203	ECEA0JKA330	ELECTROLYTIC 6.3V 33	
	(F,G)		
C4204	ECEA0JKA330	ELECTROLYTIC 6.3V 33	
	(F,G)		
C4205	ECEA1HKA2R2	ELECTROLYTIC 50V 2.2	
	(F,G)		
C4206	ECEA1HKA2R2	ELECTROLYTIC 50V 2.2	
	(F,G)		
C4207	ECEA0JKA101	ELECTROLYTIC 6.3V 100	
	(F,G)		
C4208	ECEA0JKA101	ELECTROLYTIC 6.3V 100	
	(F,G)		
C4209	ECUV1H153KBN	C CHIP 50V 0.015	
	(F,G)		
C4210	ECUV1H153KBN	C CHIP 50V 0.015	
	(F,G)		
C4211	ECUV1H103KBN	C CHIP 50V 0.01	
	(F,G)		
C4212	ECUV1H103KBN	C CHIP 50V 0.01	
	(F,G)		
C4213	ECEA1HKA010	ELECTROLYTIC 50V 1	
	(F,G)		
C4214	ECEA1HKA010	ELECTROLYTIC 50V 1	
	(F,G)		
C4215	ECEA1HKA010	ELECTROLYTIC 50V 1	
	(G)		
C4216	ECEA1HKA010	ELECTROLYTIC 50V 1	
	(G)		
C4217	ECEA1HKA010	ELECTROLYTIC 50V 1	
	(F,G)		
C4218	ECEA1HKA010	ELECTROLYTIC 50V 1	
	(F,G)		
C4219	ECEA1CKA100	ELECTROLYTIC 16V 10	
	(F,G)		
C4220	ECEA1CKA100	ELECTROLYTIC 16V 10	
	(F,G)		
C4221	ECEA1CKA100	ELECTROLYTIC 16V 10	
	(F,G)		
C4222	ECEA1CKA100	ELECTROLYTIC 16V 10	
	(F,G)		
C4235	ECEA0JKA101	ELECTROLYTIC 6.3V 100	
	(F,G)		
C4236	ECEA0JKA470	ELECTROLYTIC 6.3V 47	
	(F,G)		
C4237	ECEA1CKA100	ELECTROLYTIC 16V 10	
	(F,G)		
C4238	ECEA1CKA100	ELECTROLYTIC 16V 10	
	(F,G)		
C4239	ECEA1HKA010	ELECTROLYTIC 50V 1	
	(F,G)		
C4240	ECUV1C224ZFN	C CHIP +80%-20% 16V 0.22	
	(F,G)		
C4242	ECUV1H103ZFN	C CHIP +80%-20% 50V 0.01	
	(F,G)		
C4244	ERJ6GEY0R00V	MGF CHIP 1/10W 0	●
	(F,G)		
C4601	ECEA1CKA100	ELECTROLYTIC 16V 10	
	(F,G)		
C4603	ECEA1CKA100	ELECTROLYTIC 16V 10	
C4606	ECEA1CKA100	ELECTROLYTIC 16V 10	
	(F,G)		
C6002	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	

Ref. No.	Part No.	Part Name	Remarks
C6004	ECUV1H101JCN	C CHIP +-5% 50V 100P	
C6005	ECUV1H150GCN	C CHIP +-2% 50V 15P	
C6006	ECUV1H120JCN	C CHIP +-5% 50V 12P	
C6007	ECUV1H101JCN	C CHIP +-5% 50V 100P	
C6008	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C6009	ECUV1H101JCN	C CHIP +-5% 50V 100P	
C6010	ECUV1H101JCN	C CHIP +-5% 50V 100P	
C6016	ECEA0JU471	ELECTROLYTIC 6.3V 470	
C6019	ECEA0JKA101	ELECTROLYTIC 6.3V 100	
C6201	ECEA0JKA470	ELECTROLYTIC 6.3V 47	
C6202	ECEA0JKA330	ELECTROLYTIC 6.3V 33	
C6203	ECUV1H103KBN	C CHIP 50V 0.01	
C6204	ECUV1H103KBN	C CHIP 50V 0.01	
C6205	ECUV1H102KBN	C CHIP 50V 1000P	
C6206	ECUV1H103KBN	C CHIP 50V 0.01	
C6207	ECQB1H393KF	POLYESTER 50V 0.039	
C6208	ECEA1HKA010	ELECTROLYTIC 50V 1	
C6209	ECEA1CKA100	ELECTROLYTIC 16V 10	
C6211	ECUV1H272KBN	C CHIP 50V 2700P	
C6212	ECUV1E104KBN	C CHIP 25V 0.1	
C6213	ECUV1H151KN	C CHIP 50V 150P	
C6214	ECUV1H102KBN	C CHIP 50V 1000P	
C6217	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C6218	ECEA1CKA100	ELECTROLYTIC 16V 10	
C6221	ECEA0JKA220	ELECTROLYTIC 6.3V 22	
C6222	ECUV1H272KBN	C CHIP 50V 2700P	
C6223	ECUV1E333KBN	C CHIP 25V 0.033	
C6224	ECEA0JKA101	ELECTROLYTIC 6.3V 100	
C6228	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C6305	ECEA0JKA470	ELECTROLYTIC 6.3V 47	
C6306	ECA0JM471	ELECTROLYTIC 6.3V 470	
C6307	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C6308	ECUV1H103ZFN	C CHIP +80%-20% 50V 0.01	
C7001	ECEA0JKA221	ELECTROLYTIC 6.3V 220	
C7003	ECUV1H103ZFN	C CHIP +80%-20% 50V 0.01	
C7005	ECUV1E183KBN	C CHIP 25V 0.018	
	(B,C,D)		
C7006	ECUV1H103ZFN	C CHIP +80%-20% 50V 0.01	
C7008	ECEA1CKA101	ELECTROLYTIC 16V 100	
C7010	ECUV1H102KBN	C CHIP 50V 1000P	
C7015	ECUV1C105ZFN	C CHIP +80%-20% 16V 1	
C7018	ECUV1H103ZFN	C CHIP +80%-20% 50V 0.01	
C7019	ECUV1H103ZFN	C CHIP +80%-20% 50V 0.01	
C7020	ECUV1H103ZFN	C CHIP +80%-20% 50V 0.01	
C7022	ECUV1H330JCN	C CHIP +-5% 50V 33P	
C7023	ECUV1H330JCN	C CHIP +-5% 50V 33P	
C7024	ECUV1H103KBN	C CHIP 50V 0.01	
		COILS	
L1001	ELF15N005AB	HIGH PASS FILTER 0.5A 18M	⚠
	OR VLQS0166	HIGH PASS FILTER 0.5A 18M	⚠
	OR VLQS0167	HIGH PASS FILTER 0.5A 18M	⚠
L1002	VLQSAB7D220K	22	
L1003	VLQSAB7D100K	10	
L1006	VLPS0083		
L3014	VLQSH02R470K	47	
L3016	ELESN330KA	33	
L3018	ELESN470KA	47	
L3101	ELESN101KA	100	
L3302	VLQSH02R180J	+-5% 18	
L4001	ELELN153KA	15M	
L4101	ELESN471KA	470	
L7001	ELESN120KA	12	
L7002	ELESN101KA	100	
L7004	VLPS0092	COIL CHIP	
		CRYSTAL OSCILLATOR	
X3010	VSXS0195		
X6001	VSXS0191		
X6301	EF0EC8004T4		

(E21, E23, E25, E26)

Ref. No.	Part No.	Part Name	Remarks
		PIN HEADERS	
P1001	VJPS1154	CONNECTOR 2P	
P3001	VJPS0884	CONNECTOR 15P	
	(B,C,D)		
	VJPS0885	CONNECTOR 20P	
	(F,G)		
P4001	VJSS0888	FE CONNECTOR 2P	
P6001	VJPS0712	CONNECTOR 19P	
	(G)		
P6002	VJPS0881	CONNECTOR 8P	
P6201	VJPS0883	CONNECTOR 14P	
		SWITCHES	
SW6001	VSHS0058	LEAF SWITCH-SAFETY TAB	
SW6002	VSSS0159	MODE SELECT SWITCH	
SW6303	EVQ21309K	PUSH SWITCH	
	(B,C,D,F)		
SW6305	EVQ21309K	PUSH SWITCH	
	(B,C,D,F)		
SW6306	EVQ21309K	PUSH SWITCH	
	(B,C,D,F)		
SW6307	EVQ21309K	PUSH SWITCH	
SW6308	EVQ21309K	PUSH SWITCH	
	(G)		
SW6309	EVQ21309K	PUSH SWITCH	
SW6310	EVQ21309K	PUSH SWITCH	
SW6311	EVQ21309K	PUSH SWITCH	
SW6312	EVQ21309K	PUSH SWITCH	
SW6313	EVQ21309K	PUSH SWITCH	
SW7001	VSSS0152	SELECT SWITCH	
		FUSE & PROTECTOR	
F1001	VSFS0003A16	FUSE 125V 1.6A	⚠
	OR VSFS0028A16	FUSE 125V 1.6A	⚠
	OR VSFS0030B16	FUSE 125V 1.6A	⚠
	OR XBA1C16NU100	FUSE 125V 1.6A	⚠
PR1001	ICP-N38-TP1	IC PROTECTOR 1.5A	⚠
	OR UNH000600A	IC PROTECTOR 1.5A	⚠
PR1002	ICP-N38-TP1	IC PROTECTOR 1.5A	⚠
	OR UNH000600A	IC PROTECTOR 1.5A	⚠
		TRANSFORMER	
T1001	ETS28AD1F5NP		⚠
	OR VTPS0034-1		⚠
	OR VTPS0038-1		⚠
	OR VTPS0040-1		⚠
T4101	EIQ7QF018Q		
		MISCELLANEOUS	
JK3001	VJHS0720	A/V JACK SOCKET	
	(B,C,D)		
	VJHS0727	A/V JACK SOCKET	
	(F,G)		
E21	VEQS0602A	TUNER,UHF/VHF NR	
	(B,C,D)		
E21	VEQS0603	TUNER,UHF/VHF NR	
	(F,G)		
E23	VJSS0896	FUSE HOLDER	
E25	VEKS5520	DISPLAY TUBE UNIT	
E26	VCRS0213	MTS/SAP HIC	
	(F,G)		

(E31)

Ref. No.	Part No.	Part Name	Remarks
		OPERATION C.B.A.	■
		(G)	
		DIODES	
D7801	MA4051-M	ZENER 5.1V	
D7802	MA4051-M	ZENER 5.1V	
		RESISTORS	
R7801	ERJ6GEYJ750V	MGF CHIP 1/10W 75	
R7802	ERJ6GEY0R00V	MGF CHIP 1/10W 0	●
R7803	ERJ6GEY0R00V	MGF CHIP 1/10W 0	●
		PIN HEADERS	
P6301	VJSS0761	CONNECTOR 19P	
		SWITCHES	
SW6350	EVQ21405R	PUSH SWITCH	
SW6351	EVQ21405R	PUSH SWITCH	
		MISCELLANEOUS	
JK7801	VJHS0729	FRONT A/V JACK SOCKET	
		MISCELLANEOUS	
E31	VJRS0091	CONNECTION PIECE	
		HEAD AMP C.B.A.	■
		(A)	
		INTEGRATED CIRCUITS	
IC2601	AN3809K	IC, LINEAR CYL. DRIVE	
IC3501	AN3371SB	IC, LINEAR HEAD AMP	
		RESISTORS	
R2601	ERJ6GEYJ330V	MGF CHIP 1/10W 33	
R2602	ERJ6GEYJ330V	MGF CHIP 1/10W 33	
R2603	ERJ6GEYJ330V	MGF CHIP 1/10W 33	
R2604	ERDS2TJ1R0	1	
R2605	ERDS2TJ1R2	1.2	
R2606	ERJ6GEYJ561V	MGF CHIP 1/10W 560	
R3502	ERJ6GEY0R00V	MGF CHIP 1/10W 0	●
R3503	ERJ6GEY0R00V	MGF CHIP 1/10W 0	●
R3507	ERJ6GEYJ331V	MGF CHIP 1/10W 330	
		CAPACITORS	
C2604	ECUV1E104KBN	C CHIP 25V 0.1	
C2605	ECUV1E104KBN	C CHIP 25V 0.1	
C2606	ECUV1E104KBN	C CHIP 25V 0.1	
C2607	ECUV1E104KBN	C CHIP 25V 0.1	
C2608	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C2609	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C2610	ECUV1H103ZFN	C CHIP +80%-20% 50V 0.01	
C2611	ECUV1E333KBN	C CHIP 25V 0.033	
C2612	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C2613	ECEA1EKA4R7	ELECTROLYTIC 25V 4.7	
C2614	ECEA1EKA4R7	ELECTROLYTIC 25V 4.7	
C2615	ECEA1EKA4R7	ELECTROLYTIC 25V 4.7	
C3504	ECUV1H103ZFN	C CHIP +80%-20% 50V 0.01	
C3505	ECEA1CKA470	ELECTROLYTIC 16V 47	
C3506	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C3508	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C3511	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C3512	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C3513	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C3528	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C3529	ECUV1H103ZFN	C CHIP +80%-20% 50V 0.01	

Ref. No.	Part No.	Part Name	Remarks
		COILS	
L3501	ELESN101KA	100	
		PIN HEADERS	
P3501	VJSS0883	CONNECTOR 12P	
		HEAD AMP C.B.A.	■
		(B,C,D,E)	
		INTEGRATED CIRCUITS	
IC2601	AN3809K	IC, LINEAR CYL. DRIVE	
IC3501	AN3361SB	IC, LINEAR HEAD AMP	
		RESISTORS	
R2601	ERJ6GEYJ330V	MGF CHIP 1/10W 33	
R2602	ERJ6GEYJ330V	MGF CHIP 1/10W 33	
R2603	ERJ6GEYJ330V	MGF CHIP 1/10W 33	
R2604	ERDS2TJ1R0	1	
R2605	ERDS2TJ1R2	1.2	
R2606	ERJ6GEYJ561V	MGF CHIP 1/10W 560	
R3501	ERJ6GEYJ473V	MGF CHIP 1/10W 47K	
R3502	ERJ6GEYJ560V	MGF CHIP 1/10W 56	
R3503	ERJ6GEYJ560V	MGF CHIP 1/10W 56	
R3504	ERJ6GEYJ560V	MGF CHIP 1/10W 56	
R3505	ERJ6GEYJ560V	MGF CHIP 1/10W 56	
R3506	ERJ6GEYJ561V	MGF CHIP 1/10W 560	
R3507	ERJ6GEYJ561V	MGF CHIP 1/10W 560	
		CAPACITORS	
C2604	ECUV1E104KBN	C CHIP 25V 0.1	
C2605	ECUV1E104KBN	C CHIP 25V 0.1	
C2606	ECUV1E104KBN	C CHIP 25V 0.1	
C2607	ECUV1E104KBN	C CHIP 25V 0.1	
C2608	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C2609	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C2610	ECUV1H103ZFN	C CHIP +80%-20% 50V 0.01	
C2611	ECUV1E333KBN	C CHIP 25V 0.033	
C2612	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C2613	ECEA1EKA4R7	ELECTROLYTIC 25V 4.7	
C2614	ECEA1EKA4R7	ELECTROLYTIC 25V 4.7	
C2615	ECEA1EKA4R7	ELECTROLYTIC 25V 4.7	
C3504	ECUV1H103ZFN	C CHIP +80%-20% 50V 0.01	
C3505	ECEA1CKA470	ELECTROLYTIC 16V 47	
C3506	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C3507	ECUV1H103KBN	C CHIP 50V 0.01	
C3508	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C3511	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C3512	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C3513	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C3519	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C3520	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C3524	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C3525	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C3528	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C3529	ECUV1H103ZFN	C CHIP +80%-20% 50V 0.01	
C3532	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C3533	ECUV1H103ZFN	C CHIP +80%-20% 50V 0.01	
		COILS	
L3501	ELESN101KA	100	
		PIN HEADERS	
P3501	VJSS0885	CONNECTOR 15P	

Ref. No.	Part No.	Part Name	Remarks
		Hi-Fi AUDIO/VIDEO HEAD AMP C.B.A. (F,G,H)	■
		INTEGRATED CIRCUITS	
IC2601	AN3809K	IC, LINEAR CYL. DRIVE	
IC3501	AN3361SB	IC, LINEAR HEAD AMP	
IC4401	AN3328S	IC, LINEAR Hi-Fi AUDIO HEAD AMP	
		RESISTORS	
R2601	ERJ6GEYJ330V	MGF CHIP 1/10W 33	
R2602	ERJ6GEYJ330V	MGF CHIP 1/10W 33	
R2603	ERJ6GEYJ330V	MGF CHIP 1/10W 33	
R2604	ERDS2TJ1R0	1	
R2605	ERDS2TJ1R2	1.2	
R2606	ERJ6GEYJ561V	MGF CHIP 1/10W 560	
R3501	ERJ6GEYJ473V	MGF CHIP 1/10W 47K	
R3502	ERJ6GEYJ560V	MGF CHIP 1/10W 56	
R3503	ERJ6GEYJ560V	MGF CHIP 1/10W 56	
R3504	ERJ6GEYJ560V	MGF CHIP 1/10W 56	
R3505	ERJ6GEYJ560V	MGF CHIP 1/10W 56	
R3506	ERJ6GEYJ561V	MGF CHIP 1/10W 560	
R3507	ERJ6GEYJ561V	MGF CHIP 1/10W 560	
R4405	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R4406	ERJ6GEYJ180V	MGF CHIP 1/10W 18	
R4407	ERJ6GEYJ561V	MGF CHIP 1/10W 560	
		CAPACITORS	
C2604	ECUV1E104KBN	C CHIP 25V 0.1	
C2605	ECUV1E104KBN	C CHIP 25V 0.1	
C2606	ECUV1E104KBN	C CHIP 25V 0.1	
C2607	ECUV1E104KBN	C CHIP 25V 0.1	
C2608	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C2609	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C2610	ECUV1H103ZFN	C CHIP +80%-20% 50V 0.01	
C2611	ECUV1E333KBN	C CHIP 25V 0.033	
C2612	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C2613	ECEA1EKA4R7	ELECTROLYTIC 25V 4.7	
C2614	ECEA1EKA4R7	ELECTROLYTIC 25V 4.7	
C2615	ECEA1EKA4R7	ELECTROLYTIC 25V 4.7	
C3504	ECUV1H103ZFN	C CHIP +80%-20% 50V 0.01	
C3505	ECEA1CKA470	ELECTROLYTIC 16V 47	
G3506	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C3507	ECUV1H103KBN	C CHIP 50V 0.01	
C3508	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C3511	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C3512	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C3513	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C3519	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C3520	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C3523	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C3524	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C3528	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C3529	ECUV1H103ZFN	C CHIP +80%-20% 50V 0.01	
C3532	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C3533	ECUV1H103ZFN	C CHIP +80%-20% 50V 0.01	
C4401	ECUV1H102KBN	C CHIP 50V 1000P	
C4402	ECUV1H102KBN	C CHIP 50V 1000P	
C4405	ECUV1H103ZFN	C CHIP +80%-20% 50V 0.01	
C4406	ECUV1H472KBN	C CHIP 50V 4700P	
C4408	ECEA1CKA100	ELECTROLYTIC 16V 10	
C4409	ECUV1H103ZFN	C CHIP +80%-20% 50V 0.01	
C4411	ECUV1H103ZFN	C CHIP +80%-20% 50V 0.01	
C4412	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C4413	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C4414	ECEA0JKA101	ELECTROLYTIC 6.3V 100	
		COILS	
L3501	ELESN101KA	100	
L4401	VLQSH02R101K	100	
		PIN HEADERS	
P3501	VJSS0886	CONNECTOR 20P	

(E22)

Ref. No.	Part No.	Part Name	Remarks
		JUNCTION C.B.A.	■
		RESISTORS	
R2531	ERDS2TJ270	27	
		CAPACITORS	
C2531	ECEA1CKA100	ELECTROLYTIC 16V 10	
C2532	ECEA1CKA100	ELECTROLYTIC 16V 10	
C2533	ECEA1CKA100	ELECTROLYTIC 16V 10	
		PIN HEADERS	
P2531	VJSS0884	CONNECTOR 14P	
		ELECTRICAL PARTS LOCATED ON CHASSIS	
E22	VJAS0195-F (A,D,E,F,G,H)	AC CORD W/PLUG,120V	⚠
E22	VJAS0195-FS (B,C)	AC CORD KIT W/PLUG,120V	⚠
		SUMMARY OF "E" ITEM NUMBERS REFER TO ELECTRICAL PARTS LIST FOR MODEL INFORMATION	
E1	VEPS6026AC	MAIN C.B.A.	
E1	VEPS6023GH	MAIN C.B.A.	
E1	VEPS6023GJ	MAIN C.B.A.	
E1	VEPS6026GB	MAIN C.B.A.	
E1	VEPS6023HH	MAIN C.B.A.	
E1	VEPS6023HJ	MAIN C.B.A.	
E1	VEPS6026HB	MAIN C.B.A.	
E4	VEPS8022A	OPERATION C.B.A.	
E6	VEPS5012A	HEAD AMP C.B.A.	
E6	VEPS5011A	HEAD AMP C.B.A.	
E6	VEPS5010A	Hi-Fi AUDIO/VIDEO HEAD AMP C.B.A.	
E7	VEPS0A25A	JUNCTION C.B.A.	
E21	VEQS0602A	TUNER,UHF/VHF NR	
E21	VEQS0603	TUNER,UHF/VHF NR	
E22	VJAS0195-F	AC CORD W/PLUG,120V	
E22	VJAS0195-FS	AC CORD KIT W/PLUG,120V	
E23	VJSS0896	FUSE HOLDER	
E24	VEKS5526	LED HOLDER UNIT	
E25	VEKS5520	DISPLAY TUBE UNIT	
E26	VCRS0213	MTS/SAP HIC	
E31	VJRS0091	CONNECTION PIECE	

ORDER NO. VRD9701M101

Service Manual

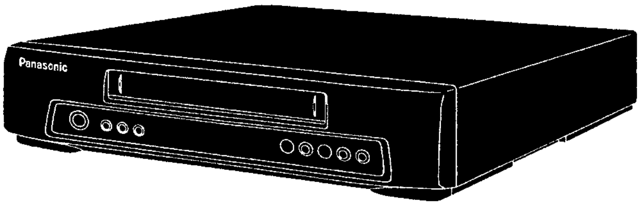
Simplified

V18124

Video Cassette Recorder

Panasonic VHS

NV-SD4070PN
NV-HD6070PN



Please use this manual together with the Service Manual for Order No. MKS9612M301
Model No. PV-7400/PV-7450. V18003

SPECIFICATIONS

ITEM	SPECIFICATION	1	2
Power	Source: 120V AC ± 10%, 60 Hz ± 0.5%	○	○
	Consumption: Approx. 18 watts (Power on), Approx. 6 watts (Power off) Approx. 23 watts (Power on), Approx. 7 watts (Power off)	○ —	— ○
Video	Head: 4 rotary heads helical scanning system	○	○
	Input Level: VIDEO IN Jack (Phono type) 1.0 Vp-p 75Ω unbalanced Output Level: VIDEO OUT Jack (Phono type) 1.0 Vp-p 75Ω unbalanced Signal-to-Noise Ratio: SP: more than 43 dB LP/SLP: more than 41 dB Horizontal Resolution: Color/Monochrome: more than 230 lines	○	○
Audio	Head: Normal Mono: 1 stationary head Hi-Fi Stereo: 2 rotary heads	○ —	○ ○
	Input Level: AUDIO IN Jack (Phono type) -10 dBv 50kΩ unbalanced Output Level: AUDIO OUT Jack (Phono type) -8 dBv 600Ω unbalanced AUDIO OUT Jack (Phono type) -8 dBv 1kΩ unbalanced	○ ○ —	○ — ○
	Frequency Response: Normal Mono: SP: 100 Hz ~ 8 kHz LP: 100 Hz ~ 6 kHz SLP: 100 Hz ~ 5 kHz Hi-Fi Stereo: SP/LP/SLP: 20 Hz ~ 20 kHz	○ ○ ○ —	○ ○ ○ ○
	Signal-to-Noise Ratio: Normal Mono: SP: more than 42 dB LP/SLP: more than 40 dB Hi-Fi Stereo: SP/LP/SLP: more than 60 dB	○ ○ —	○ ○ ○
	Wow and Flutter: Normal Mono: SP: Less than 0.2% WRMS LP: Less than 0.3% WRMS SLP: Less than 0.4% WRMS Hi-Fi Stereo: Less than 0.015% WRMS	○ ○ ○ —	○ ○ ○ ○
RF Out	CH 3/CH 4 switchable 72 dBµ (open voltage) 75Ω unbalanced	○	○
Tuner	Broadcast Channels: VHF 2 ~ 13, UHF 14 ~ 69 CATV Channels: Midband A through I (14 ~ 22) Superband J through W (23 ~ 36) Hyperband AA ~ EEE (37 ~ 64) Lowband A-5 ~ A-1 (95 ~ 99) Special CATV channel 5A (01) Ultraband 65 ~ 94, 100 ~ 125	○	○
Video Signal	EIA Standard (525 lines, 60 fields) NTSC Color Signal	○	○
Tape Speed	SP: 1-5/16 i.p.s (33.35 mm/sec), LP: 21/32 i.p.s (16.67 mm/sec), SLP: 7/16 i.p.s (11.12 mm/sec) Record/Playback Time: 8 Hrs with 160 min. type tape used in SLP mode FF/REW Time: Less than 3 min. (120 min. type tape)	○	○
Tape Format	Tape width 1/2" (12.7 mm) high density tape	○	○
Operating Condition	41°F(5°C) ~ 104°F(40°C) (Temperature) 10% ~ 75% (Humidity)	○	○
Dimension	14-15/16"(380 mm) (W) X 3-2/3"(93 mm) (H) X 11-13/16"(300 mm) (D)	○	○
Weight	7.5 lbs. (3.4 kg)	○	○

1. NV-SD4070PN
2. NV-HD6070PN

Weight and dimensions shown are approximate.
Specifications are subject to change without notice.

Panasonic

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⚠ WARNING

This service information is designed for experienced repair technicians only and is not designed for use by the general public. It does not contain warnings or cautions to advise non-technical individuals of potential dangers in attempting to service a product. Products powered by electricity should be serviced or repaired only by experienced professional technicians. Any attempt to service or repair the product or products dealt with in this service information by anyone else could result in serious injury or death.

I. DIFFERENCES BETWEEN NV-SD4070PN and PV-7400

Model NV-SD4070PN is similar to model PV-7400.
Use this Service Manual VRD9701M101 when servicing this model.

COMPARISON CHART BETWEEN NV-SD4070PN & PV-7400

MECHANICAL REPLACEMENT PARTS LIST

Page No.	Ref. No.	Section No.		Pcs/ Set	PV-7400 ➡	NV-SD4070PN	
					Part No.	Part No.	Part Name
7-2	71	4		1	VYPS6668	VYPS6733	FRONT PANEL ASS'Y
7-2	72	4		1	VYPS6666	VYPS6737	CASSETTE DOOR-LID UNIT
7-2	121	5		1	VPGS3788	VPGS3822	PACKING CASE, PAPER
7-2	122	5		1	VQFS3327	VQFS3370	FAN BAG

ELECTRICAL REPLACEMENT PARTS LIST

Page No.	Ref. No.		Pcs/ Set	PV-7400 ➡	NV-SD4070PN	
				Part No.	Part No.	Part Name
7-8	IC6001		1	MN675048A5A3	MN675048A5A4	IC, 8BIT MICROPROCESSOR

II. DIFFERENCES BETWEEN NV-HD6070PN and PV-7450

Model NV-HD6070PN is similar to model PV-7450.
Use this Service Manual VRD9701M101 when servicing this model.

COMPARISON CHART BETWEEN NV-SD4070PN & PV-7400

MECHANICAL REPLACEMENT PARTS LIST

Page No.	Ref. No.	Section No.		Pcs/ Set	PV-7450 ➡	NV-HD6070PN	
					Part No.	Part No.	Part Name
7-2	71	4		1	VYPS6670	VYPS6734	FRONT PANEL ASS'Y
7-2	72	4		1	VYPS6667	VYPS6737	CASSETTE DOOR-LID UNIT
7-2	121	5		1	VPGS3789	VPGS3823	PACKING CASE, PAPER
7-2	122	5		1	VQFS3327	VQFS3370	FAN BAG

ELECTRICAL REPLACEMENT PARTS LIST

Page No.	Ref. No.		Pcs/ Set	PV-7450 ➡	NV-HD6070PN	
				Part No.	Part No.	Part Name
7-8	IC6001		1	MN675048A5A3	MN675048A5A4	IC, 8BIT MICROPROCESSOR